TSC Technical Support Center

TSC Problem Management

Procedures

Prepared/Revised By: Johnny Nunez, Guy Phillips
Assistants: Tony Sottile, Colin Mapp. John Goswick, Jade Tamargo, Marc Caterina, Tim Wasalski, Art Hilman, Rafael Fong, Art Alinovi, Bob Mirda, Anthony Loiacono, Yvette Gonzalez, Zaigham Bukhari

Last Revised: 12/29/2003

Table of Contents

TSC Problem Management Procedures

Purpose

This document outlines the workflow and accountabilities related to managing resolution of a problem. These procedures will ensure the IT Staff is aware of any problems affecting the campus environment and that prompt and timely action is taken to resolve the issue. Also, to provide a means for allocating appropriate resources to ensure maximum systems availability and user computing services. The Technical Support Center procedures are to be used to document and manage the resolution of any problem affecting the operational production environment.

Production Problem Escalation Procedure

Off-Peak Hours Support

The off-peak and after hours support procedures are clearly articulated to provide the highest levels of responsiveness from the Information Technology staff.

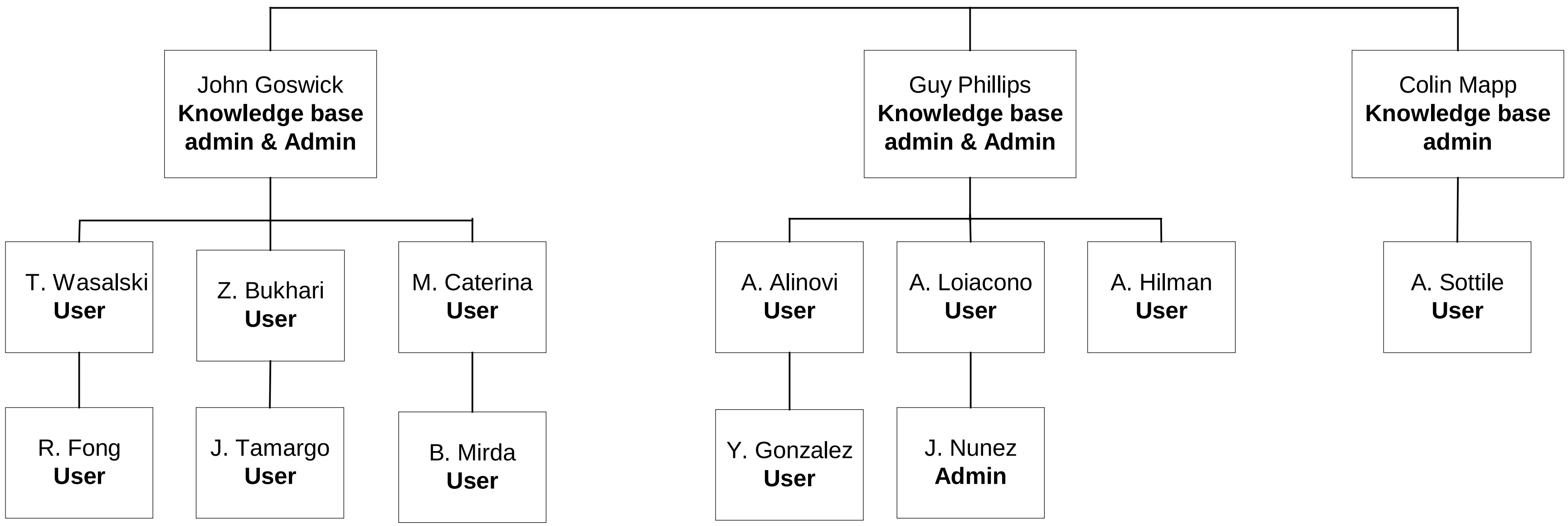
If a problem occurs during off-peak operating hours, 5:30 p.m. to 10:00 p.m. Monday – Friday, and 7:30 a.m. to 5:30 p.m. Saturday, IT staff working must answer incoming calls and voice mails directed to the Technical Support Center. IT staff must open a ticket and enter all the pertinent information relating to the problem.

Problems with an Urgent priority are expected to be worked on until resolution unless otherwise agreed upon by the campus LAN Managers. If an IT Staff member is unable to resolve the urgent problem, he/she must contact their respective Administrative LAN Manager. This may require that all persons involved must come in to work during off hours to assist with resolution/recovery efforts.

After Hours Support

The campus end user is to notify the TSC via phone or e-mail if a technical problem occurs outside normal TSC operating hours, 10:00 p.m. to 8:00 a.m. Monday –Friday, and 5:30 p.m. Saturday to 8:00 a.m. Monday. During after hours, users will receive a response on the next available business day.

IT Staff Help Desk Database Roles



Help Desk Database Roles and Responsibilities

The Help Desk database roles chart lists the roles that individual IT staff members are assigned for the database. The Help Desk Database roles are user profiles in the new Help Desk database application. Table 1 lists the roles and responsibilities IT staff will be held accountable for the new Help Desk Database and technical support.

Roles and Responsibilities Table 1

Role	Responsibility
Admin	Provide level 1 and 2 technical support to staff and faculty. Create and follow up on the progress of trouble tickets. Perform trouble ticket analysis and reporting. Maintain Help Desk database for call management and tracking.
Knowledge Base admin	Review and approve knowledge base entries.
User	Provide level 2 technical support to staff and faculty. Resolve tickets in a timely manner. Monitor pending and suspended tickets. Create and edit knowledge base entries.

TSC Ticket Priority Levels

When a Help Desk ticket is opened it must be assigned a priority code based on the severity of the problem. The Technical Support Administrator will monitor and follow up on the progress of all Help Desk tickets. Notifying end-users within the allotted time within the tickets priority level must be conducted during DeVry's operational business hours. All urgent and high codes must be communicated directly to the appropriate area for immediate resolution. Following are the definitions for the ticket priority codes.

Urgent
Multiple users are experiencing an outage and cannot access primary business application. Problem places significant burden on users operations with no work-around solution available. All urgent problems will be worked on continuously until the problem is resolved. It is the responsibility of the LAN Managers of the respective area where the problem has been assigned to coordinate activities and ensure appropriate resources are working on the problem. It is the responsibility of the Technical Support Administrator and/or working IT Staff personnel to notify end-users within 30 minutes of the ticket's Urgent priority level and follow up the progress of the resolution.

High
Multiple users cannot access a non-primary business application, or a single user cannot access a primary business application. Problem has short-term work-around solution available. It is the responsibility of the LAN Managers of the respective area where the problem has been assigned to coordinate activities and ensure appropriate resources are working on the problem. It is the responsibility of the Technical Support Administrator and/or IT Staff personnel to notify end-users within 2 hours of the ticket's High priority level and follow up the progress of the resolution.

Medium
A single user cannot access a non-primary business application, or a user has an inquiry: question on how things work, service, request, etc. Problem has long-term work-around solution available. Priority medium problems must be assigned to the technician of the respective area where the problem will be resolved. The assigned technician must contact the user within 8 hours of the ticket's Medium priority level. It is the responsibility of the Technical Support Administrator and/or IT Staff personnel to follow up to monitor the resolution.

Low
A request for replacing a hardware device or installing software application for a single user. Includes imaging computers, e-mail creations, network and telephone accounts, project requests and Audio/Visual setups. Priority low problems must be assigned to the technician of the respective area where the problem will be resolved. The assigned technician must contact the user within 48 hours of the ticket's Low priority level. It is the responsibility of the Technical Support Administrator and/or IT Staff personnel to follow up the progress of the resolution.

TSC Standard Priority Response Time Matrix

Priority Response Time Table 2

Priority	**Definition**	**Initial Call (Response time to User)**	**Resolution Time**
Urgent	Multiple users are experiencing an outage and cannot access primary business application. Problem has no work-around solution available.	½ business hour	½ business day
High	Multiple users cannot access a non-primary business application, or a single user cannot access a primary business application. Problem has short-term work-around solution available.	2 business hours	1 business day
Medium	A single user cannot access a non-primary business application, or a user has an inquiry: question on how things work, service, request, etc. Problem has long-term work-around solution available.	1 business day	3 business days
Low	Request for replacing a hardware device or installing software application for user. Includes imaging computers, e-mail creations, network accounts, project requests, telephone accounts, and A/V setups.	2 business days	6 business days
Suspended	Additional time is needed to resolve a pending ticket. The suspended date is based on the turn around time provided by the requestor.	2 days to negotiate	Negotiated

NOTE: A "business hour" may only fall during a "business day," which is 8:00 a.m. to 8:00 p.m. Eastern Daylight Time, Monday through Friday, excluding holidays.
** Ticket response times are an automated feature of the Help Desk Database application and do not apply to a Suspended Ticket.
** The **resolution time** provides a best estimate of the time between the initial call and the actual resolution.
** The **Initial Call response time to User** provides an estimate of the timeframe to respond to a user after the initial call.

TSC Standard Ticket Threshold Time Matrix

Ticket Threshold Time Table 3

Priority	**1st Point of Threshold**	**2nd Point of Threshold**	**3rd Point of Threshold**
Urgent	At the creation of the problem ticket, the following are notified by e-mail: - Technician - User	If a ticket is pending for 24 hours, the following are notified by e-mail: - TSC Admin (Supervisor e-mail) - Technician	If a ticket is pending for 48 hours, the following are notified by e-mail: - TSC Admin (Supervisor e-mail) - Technician
High	At the creation of the problem ticket, the following are notified by e-mail: - Technician - User	If a ticket is pending for 24 hours, the following are notified by e-mail: - TSC Admin (Supervisor e-mail) - Technician	If a ticket is pending for 48 hours, the following are notified by e-mail: - TSC Admin (Supervisor e-mail) - Technician
Medium	At the creation of the problem ticket, the following are notified by e-mail: - Technician - User	If a ticket is pending for 72 hours, the following are notified by e-mail: - Technician	If a ticket is pending for 96 hours, the following are notified by e-mail: - TSC Admin (Supervisor e-mail) - Technician
Low	At the creation of the problem ticket, the following are notified by e-mail: - Technician - User	If a ticket is pending for 96 hours, the following are notified by e-mail: - Technician	If a ticket is pending for 144 hours, the following are notified by e-mail: - TSC Admin (Supervisor e-mail) - Technician

NOTE: Ticket threshold times only fall during a "business day," which is 8:00 a.m. to 8:00 p.m. Eastern Daylight Time, Monday through Friday, excluding holidays. A business day reflects DeVry North Brunswick's peak business hours.

** Ticket threshold times are an automated feature of the Help Desk Database application and do not apply to a suspended ticket.
** **2nd point of threshold** occurs when ticket resolution has not been completed and the current time minus the ticket open time exceeds 80% of the defined threshold.
** **3rd point of threshold** occurs when ticket resolution has not been completed and the current time minus the ticket open time exceeds the defined threshold (any multiples of it).

Initial Call Response Threshold Time Matrix

Initial Call Response Table 4

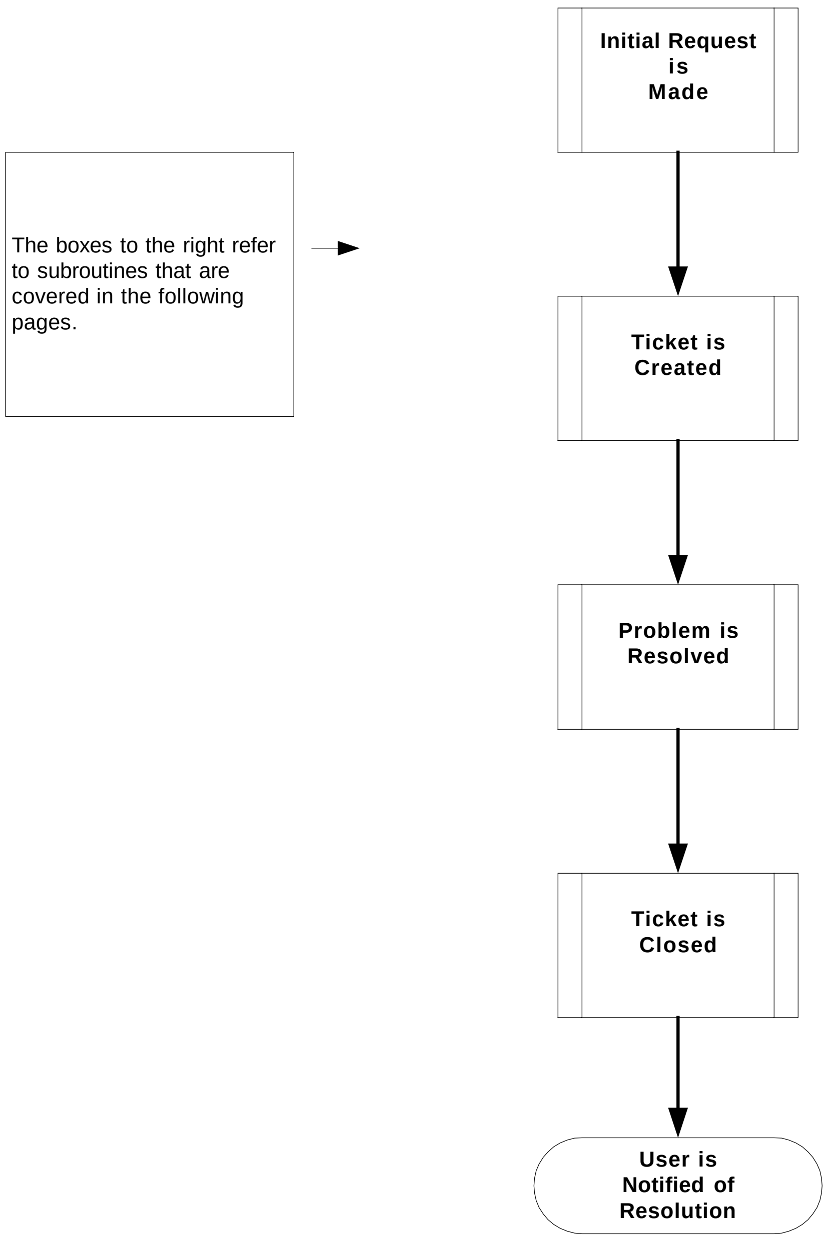
Priority	**Elapsed Time**	**Whom Notified**
Urgent	30 minutes	- LAN Manager (Emergency e-mail) - TSC Admin (Supervisor e-mail)
High	2 hours	- LAN Manager (Emergency e-mail) - TSC Admin (Supervisor e-mail)
Medium	8 hours	- LAN Manager (Emergency e-mail) - TSC Admin (Supervisor e-mail)
Low	48 hours	- LAN Manager (Emergency e-mail) - TSC Admin (Supervisor e-mail)

NOTE: Initial call response threshold times only fall during specific hours of a "business day," which is 10:00 a.m. to 6:00 p.m. Eastern Daylight Time, Monday through Friday, excluding holidays.

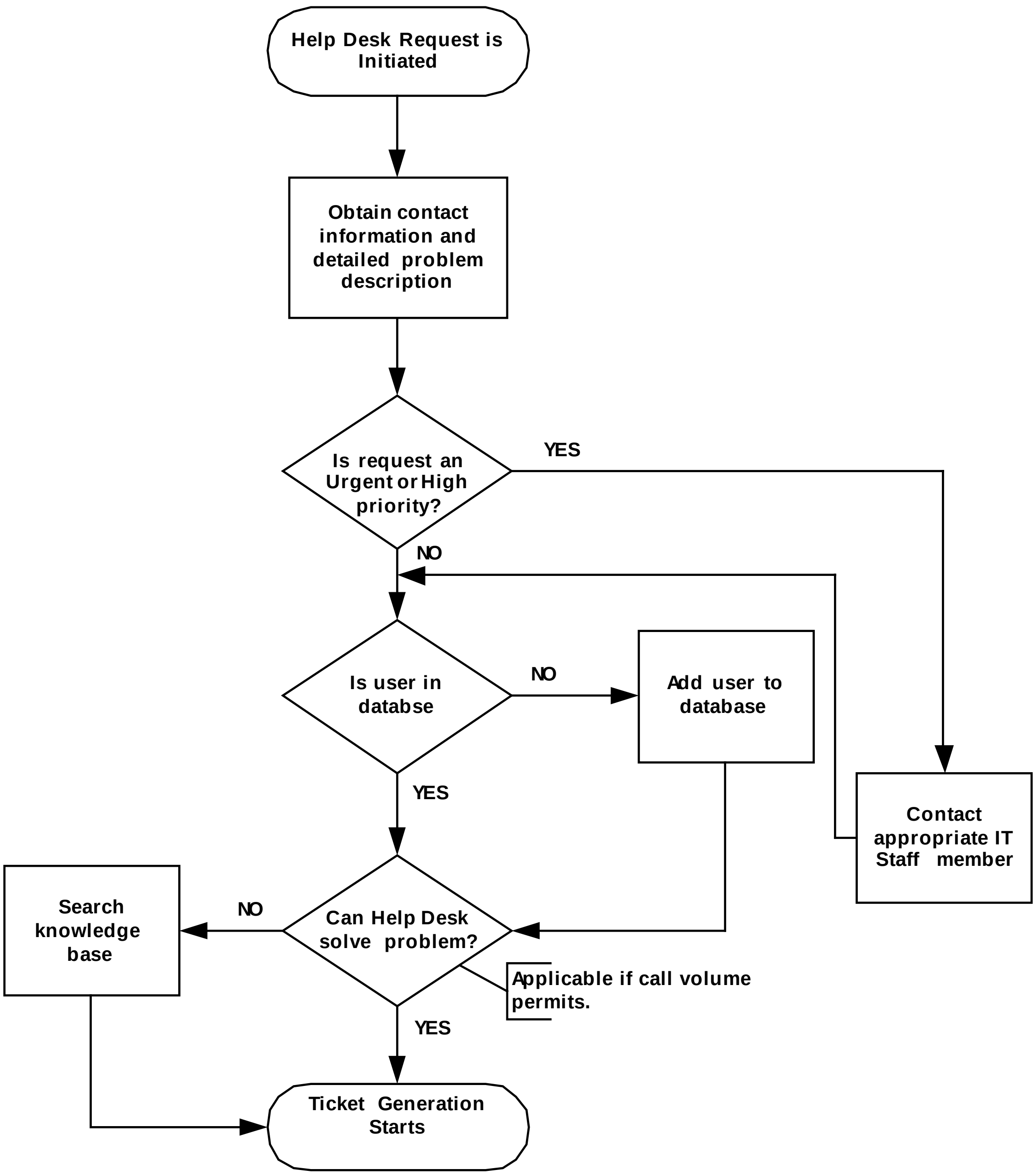
** **Elapsed time** is the maximum time to contact the user within the allotted time of a tickets priority level. Elapsed times are an automated feature of the Help Desk Database application and do not apply to a suspended ticket.

** **Whom notified** are individuals who are sent e-mail reminders if the initial communication to the user has not been completed within (80%) of the elapsed time (and any multiples of it).

Help Desk Ticket Flow Chart Overview



Initial Request - Subroutine



Initial Request Subroutine Process

Initial Request

The initial request can be in any form: phone call, voicemail, walk-in, or e-mail. When an initial request is made to the Technical Support Center, make sure to follow these guidelines:

Phone call: Gather contact information such as first and last name, department, phone extension, and detailed description of the problem.

Voicemail: Record the contact information and detailed description of the problem. Contact the requestor if voicemail information is unclear or missing information. Delete the voice mail from the mailbox.

E-mail: Obtain contact information and detailed description of the problem. Reply to the sender of the e-mail if information is unclear or missing additional information. Move the e-mail request to the forward folder.

Walk-in: Obtain contact information and detailed description of the problem.

NOTE: Listen to the user's issue and then ask questions to obtain more information in deciphering the problem. Obtain the exact error message if possible.

Is Initial Request an Urgent or High Priority?

If the initial request is of *urgent* or *high* priority, the initial technician should notify the appropriate IT staff personnel via **phone** of the technical issue. The initial technician should generate a ticket describing the problem and assign it to the appropriate IT staff personnel. The IT staff personnel handling the *urgent* or *high* request should send an e-mail notification message explaining the issue to the users and/or departments that are directly impacted by the *urgent* or *high* priority issue. Once the IT Staff personnel handling the *urgent* or *high* priority issue resolves the problem, he/she should close the ticket. Once the urgent or high priority problem is resolved, The IT staff personnel responsible for the resolution should send an e-mail notification informing users and/or departments involved about the resolution.

Help Desk Database User Verification

During the initial request verify that the user is listed in the Help Desk database. Select the *username* drop list in the *Enter Pending Ticket* to select the requestor's name.

If users contact information is *not* in the Help Desk database, create a new user account with the users contact information. Refer to *creating a user* instructions in Appendix A section of this document. Ensure that the users first and last name, department, phone extension, and e-mail is consistent with the end-users contact information.

Can the Initial Technician Solve the Problem?

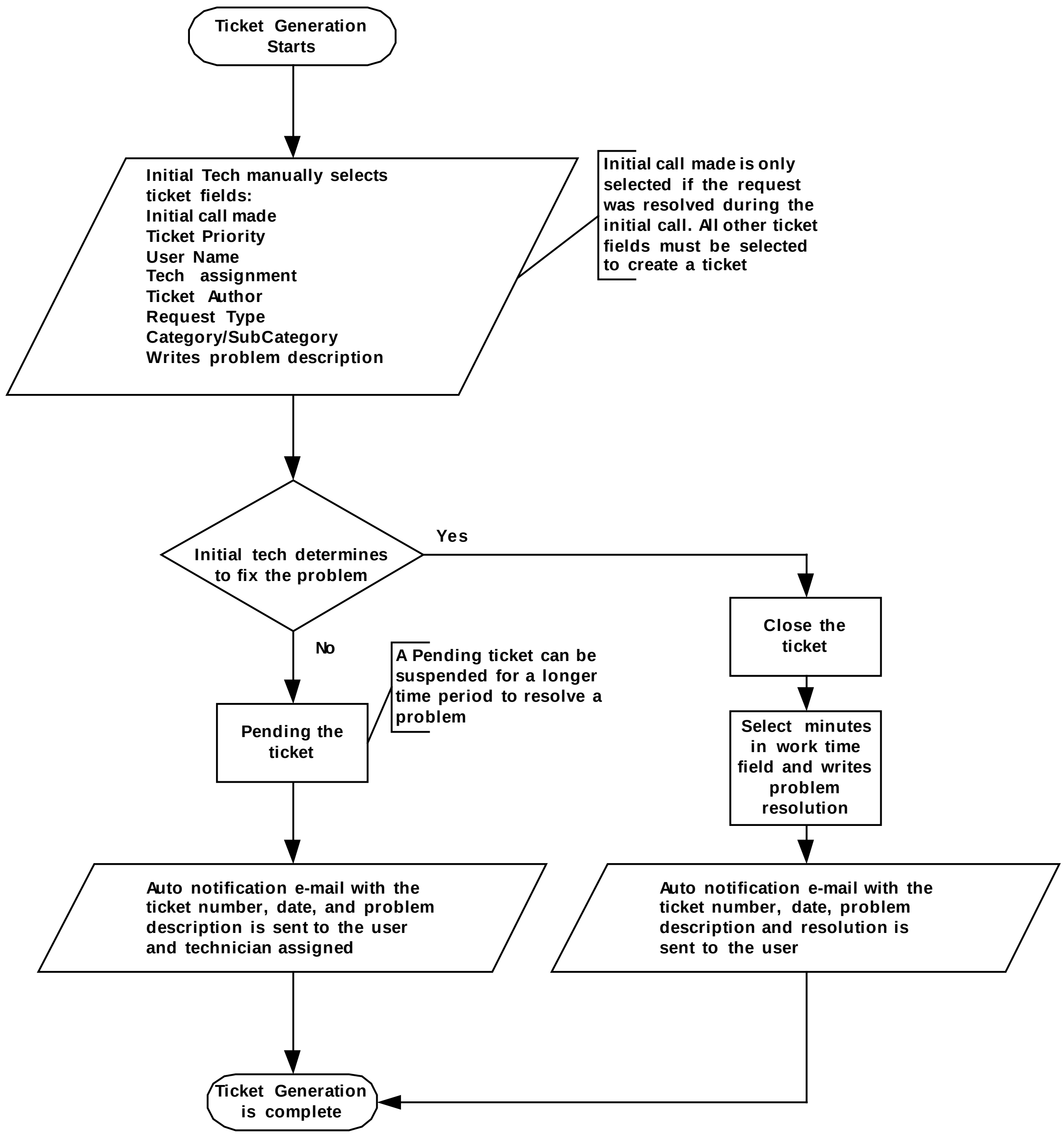
If the Technical Support Center is experiencing *low call volume*, the initial technician should try to resolve the problem during the initial request.

If the initial technician does not know how to solve the problem, he/she should *search* the *knowledge base* entries in the Help Desk database for a resolution. Refer to *searching the knowledge base* instructions in Appendix A section of this document.

If the solution *exists* in the knowledge base, the initial technician should solve the problem and generate and *close* the trouble ticket.

If the solution does *not exist* in the database, the initial technician should generate a ticket and *assign* it to a *technician* who possesses the proper technical skill-set to resolve the problem then *pend* (open) the ticket. Refer to the *IT staff skill set matrix* chart to view individual technical skill sets of the IT department's staff.

Ticket Generation - Subroutine



Ticket Generation Subroutine Process

Ticket Generation

During the ticket generation process, the initial technician must *manually* select all the listed fields to create a ticket. A technician must select the following fields during the ticket generation process:

User: Contains a name listing of Staff and Faculty users. Select the users name that initiated the request.

Problem Description: Type a detailed description of the problem. Include what is the problem, where, when, and how the problem occurred. Include as much information as possible in the *problem description* to ensure the assigned technician can decipher through the information and identify the accurate interpretation of the problem.

Priority: Contains a listing of priority codes. Select *Urgent*, *High*, *Medium*, or *Low* priority codes depending on the severity of the technical problem. Each priority level has an allocated time to contact the user. Refer to the *Standard Priority Response Time Matrix* section of this document.

Tech Assigned: Contains a name listing of IT Staff personnel. Select an IT Staff member that posses the right technical skill-set to resolve the problem. Check the IT Staff members work schedule, ticket pending status, and technical skill set before assigning a trouble ticket.

Initial call Made: is an automated feature that provides an estimate of the timeframe to respond to a user after the initial request. During the ticket generation process, the *initial call made* check box can only be selected if the technical request was resolved during the initial call. If the technical request was *not* resolved during the initial call, the *assigned technician* must select the *Initial Call Made* check box within the allotted time allowed for the pending ticket's priority level. Refer to the *Initial Call Response Time Matrix* section of this document.

Created By: Contains a name listing of IT Staff personnel. Select the IT Staff personnel who generated the ticket.

Type: Contains a list of request types. Select the type of initial request: *phone call*, *e-mail*, *walk-in*, or *project request*.

Category: Contains a listing of *categories*. Select the type of category specific to the problem description. If the category is not listed, inform the Technical Support Administrator to create the new category listing in the database.

Sub-Category: Contains a listing of *subcategories*. Select the type of sub-category specific to the problem description. If the sub-category is not listed, inform the Technical Support Administrator to create the new sub-category listing in the database.

<u>Problem Resolution:</u> Type a detailed instructional process of the solution. Include as much information as possible in the *problem resolution* to ensure that other IT staff members could follow the instructions to resolve similar issues when requested.

Pending Ticket

Pending (open) a generated ticket if the problem is not resolved during the initial request and the ticket needs to be assigned to a technician (IT Staff member).

Closed Ticket

Close the ticket if the ticket has been resolved during the initial request and is not assigned to a technician. Check the *initial call made* box, select the minutes to resolve the problem in the *work time* field and write a detailed *problem resolution*.

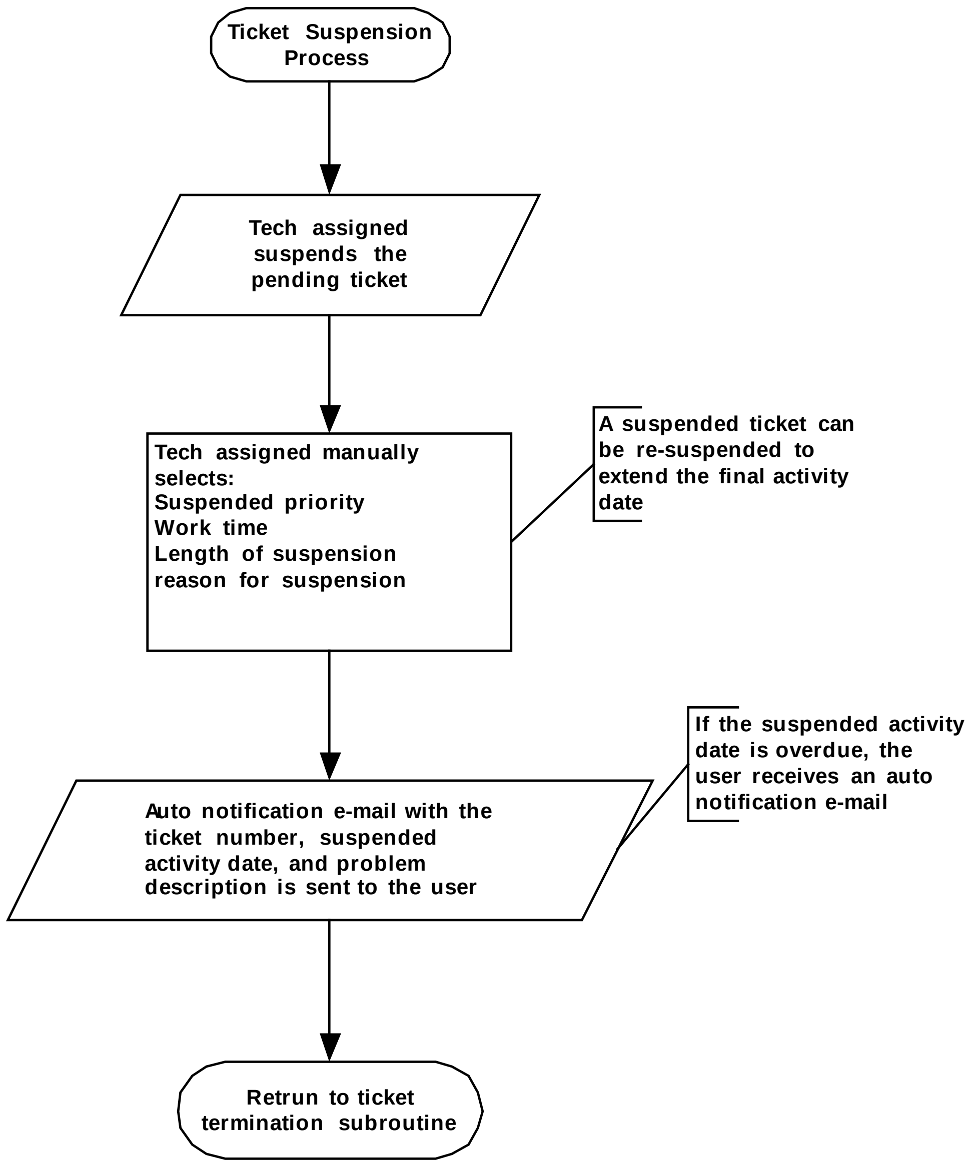
Automatic E-mail Notification

A notification e-mail with the ticket number, date, problem description and resolution is sent to the user when a ticket is *closed*.

A notification e-mail with the ticket number, date, and problem description is sent to the user and assigned technician when a ticket is *open*. The assigned technician must check off the *initial call made* box to verify ticket reception and select the *work time* minutes within the allotted time for the ticket's priority level. If the *initial call made* box is not checked off before the allotted time of the tickets priority level, an *Initial Help Desk Call Request* auto notification e-mail is sent to the technician's assigned respective department LAN Manager and/or Technical Support Administrator.

NOTE: All tickets should be resolved within the <u>Initial Call Made</u> response time to ensure the highest customer service levels.

Ticket Suspension-Subroutine



Ticket Suspension Subroutine Process

Ticket Suspension

IT Staff personnel can only suspend the activity date of a pending ticket if the ticket requires additional days to resolve the problem. Once a pending ticket is suspended, it is the responsibility of the assigned technician to monitor the progress of the suspended ticket until the problem is resolved. Ticket suspension should only be performed on either of the following conditions:

- Additional time is needed to resolve a pending ticket. Includes additional time for imaging computers, e-mail creations, telephone and A/V setups, network accounts, software installations, project requests, etc.

- Rationale for suspended status is based on a hardware replacement or software that must be ordered. The suspended date is based on the turn around time provided by the vendor.

After a pending ticket is suspended, the assigned technician must follow the ticket termination subroutine until the problem is resolved.

Automatic E-mail Notification

After a pending ticket is *suspended*, an auto-notification e-mail with the ticket number, final suspension date, problem description, and reason for ticket suspension is sent to the *user*.

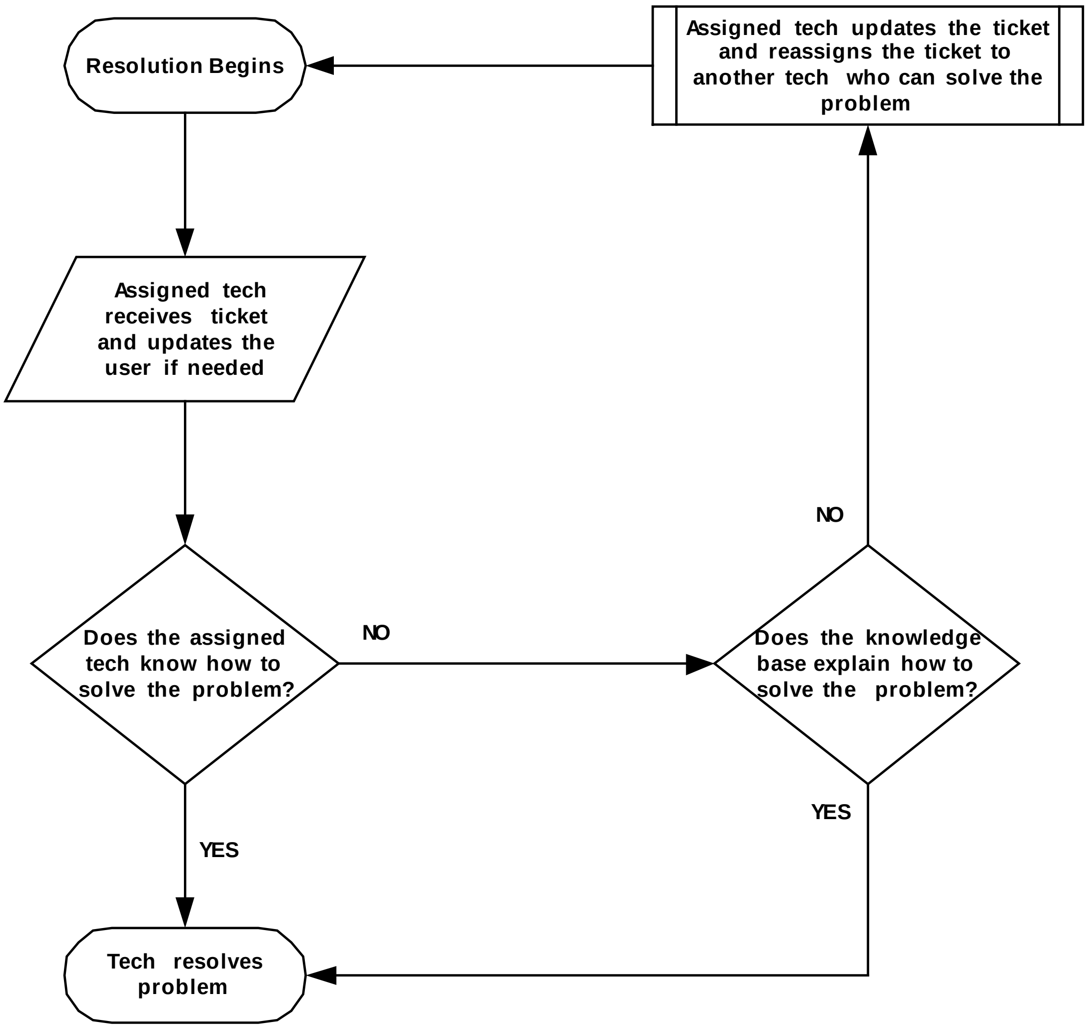
Re-suspending a ticket

A suspended ticket can be *re-suspended* to extend the final activity suspension date. Refer to the *re-suspending ticket* process section in Appendix A.

Automatic E-mail Notification

After a suspended ticket is *re-suspended*, an auto-notification e-mail with the ticket number, final suspension date, problem description, and reason for ticket suspension is sent to the user.

Problem Resolution- Subroutine



Problem Resolution Subroutine Process

Problem Resolution

Problem resolution occurs after a pending ticket is generated. The assigned technician receives the ticket and updates the user, if necessary, within the allotted time allowed for the ticket's priority level (*urgent*, *high*, *medium*, or *low*).

NOTE: All tickets should be resolved within the <u>Initial Call Made</u> response time of a tickets priority level to ensure the highest customer service levels.

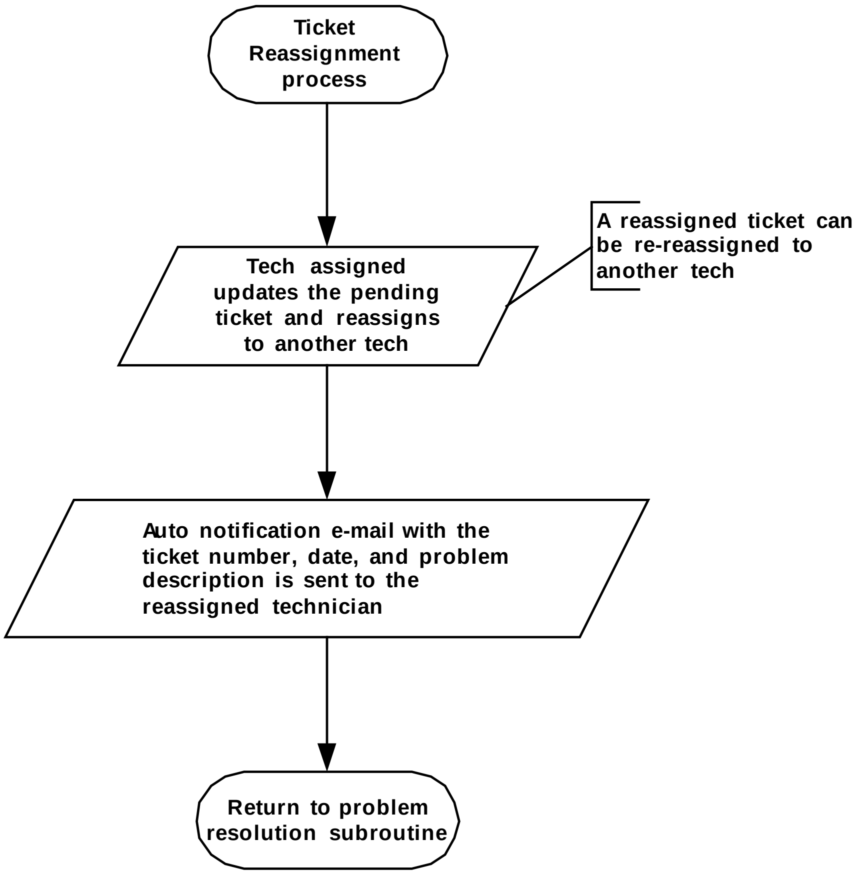
If the assigned technician *knows* how to resolve the problem, the assigned technician resolves the technical problem and completes the problem resolution section of the pending ticket, then closes the ticket.

If the assigned technician does *not* know how to solve the problem, the assigned technician must search the Help Desk *knowledge base* for entries specific to the problem description. Refer to the *Searching the Knowledge base* section in Appendix A.

If the assigned technician *cannot* find a solution in the knowledge base concerning the problem description, he/she can *reassign* the ticket to another technician that posses the proper technical skill.

NOTE: Ticket reassignment can only be performed after all alternative options are exhausted. Refer to ticket reassignment subroutine process of this document.

Ticket Reassignment - Subroutine



Ticket Reassignment Subroutine Process

Ticket Reassignment

An assigned technician can reassign a ticket to another technician who poses the proper technical skills to resolve the problem. The initial technician who reassigns a ticket to another technician should update the notes field of the ticket and signature the ticket. Once a ticket is reassigned, it is the responsibility of the reassigned technician to monitor the progress of the reassigned ticket until the problem is resolved. Ticket reassignment should only be performed on either of the following conditions:

- The assigned technician has exhausted all resources—knowledge base and human—to resolve the problem.

- The assigned technician has finished his/her work shift and wants to reassign the ticket to another IT Staff member who can resolve the technical problem during the following work shift.

- The ticket contains multiple requests that need to be resolved by additional IT staff personnel. Once the assigned IT staff personnel resolves their portion of the multiple requests, he/she is to update the *notes field* and reassign the ticket to the appropriate IT staff personnel. Ticket reassignment until the ticket is closed. IT staff personnel should notify the user who submitted the request when he/she resolves their portion of the multiple request ticket. The IT staff personnel who resolves the last request is responsible for closing the ticket.

After a ticket is *reassigned*, the reassigned technician must follow the problem resolution subroutine until the problem is resolved. Refer to *reassigning a pending ticket* in Appendix A.

Automatic E-mail Notification

After a ticket is *reassigned*, an auto-notification e-mail with the ticket number, date, and problem description is sent to the reassigned technician. In addition, the priority level, user name, phone extension, and department information of the previous assigned technician is included in the auto e-mail notification.

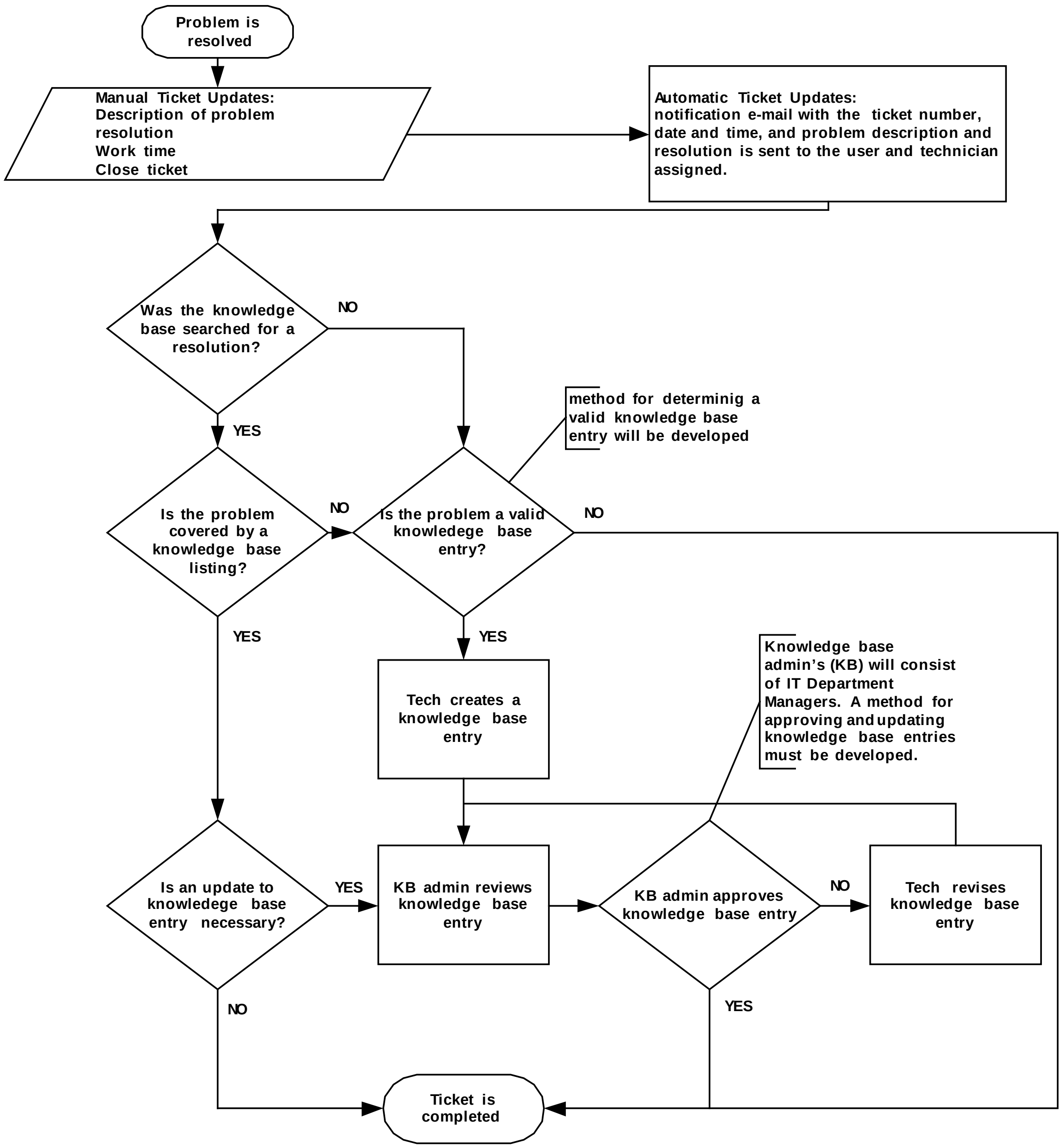
Ticket Re-Reassignment

A reassigned ticket can be *reassigned* to another technician. Refer to the *re-reassignment ticket* process in Appendix A.

Automatic E-mail Notification

After ticket is *re-reassigned*, an auto-notification e-mail with the ticket number, date, and problem description is sent to the reassigned technician. In addition, the priority level, user name, phone extension, and department information of the previous assigned technician is included in the auto-notification.

Ticket Termination- Subroutine



Ticket Termination Subroutine Process

Manual Ticket Updates

The assigned technician types in a detailed problem resolution, selects the work time to complete the ticket, and closes the ticket.

Automatic Ticket Updates

Auto-notification e-mail with the ticket number, date and time, problem description and resolution is sent to the *user*.

Knowledge base entry

If a knowledge base entry is used for the ticket problem description, close the ticket.

If the knowledge base was not used for the resolution, ask yourself: Is the ticket problem worth developing a knowledge base entry?

If the answer is *no*, the assigned technician must close the ticket without creating a knowledge base entry.

If the answer is *yes*, the assigned technician must create a knowledge base entry. Refer to *creating a knowledge base entry* in Appendix A.

After a knowledge base entry is created it must be *reviewed* by the Knowledge Base (KB) Admin.

If the KB Admin *disapproves* of the knowledge base entry, the assigned technician must revise the entry and resubmit the entry to the KB Admin until it is approved.

If the KB Admin *approves* the knowledge base entry, the entry is added to the Help Desk database (to be shared by all DeVry campuses).

Automatic E-mail Notification

After a *knowledge base entry* is created, periodic auto-notification e-mails with the title, symptom, cause, and resolution is sent to the assigned technician until the entry is approved.