The IBM Rational License Key Center (LKC) is an online license key delivery and management service that provides you easy access to the keys associated with your IBM Rational products.

IBM Rational License Key Center

- What is the IBM Rational License Key Center?
- What license keys can I manage using the IBM Rational License Key Center?
- How do I get my license keys once I place an order with IBM?
- What is the name of the email account the IBM Rational License Key Center uses to send mail?
- Does the order email show me the license keys I need?
- How long does it take for my keys to show up on the License Key Center after I place my order with IBM?

Account, members, and login

- What did IBM use as my IBM Rational License Key Center account ID?
- How can I add other users to my IBM Rational License Key Center account?
- Can users add themselves to my account without having an administrator manually add them?
- Why would I have multiple License Key Center accounts?
- Can I log into multiple accounts at one time?
- If I am logged into one account, how do log into another account?
- Can I move my orders or license keys between accounts? Can I consolidate all my license keys into one account?

Order Review

- How do I see my orders on the IBM Rational License Key Center?
- Will the License Key Center show me all IBM orders?
- Will the Order Details screen show me all IBM products on my order or just Rational products?

Generating license keys

- How do I get my license key?
- What is Fixed Term licensing?
- Date Based Licensing
- Token Licensing

Borrowing License functionality

What is borrowing?

- How long may a user borrow a license?
- What is a Dongle?
- How do I upgrade my Products using Renewal Order?
- Why do some products show multiple license keys on the Select License Keys screen?
- What do I enter for the number of license keys to generate?
- What is a host ID and host name and where do I find them?
- What is the Port number used for?
- What is the Host Description?
- What are redundant license servers and how do they work?
- What hosts are listed in the Existing License Hosts drop-down?

Returning and moving license keys

- How do I move a license key to a new host?
- What does "returning" license keys mean and how does it work?
- Can I return a portion of the license keys I have generated previously?
- What should I do after I return the keys?

Rational Development & Test Environment for System z (RD&T)

- Number of Licenses
- Server Instances
- Emulated Central Processor

Token Licensing

- Token Licensing FAQ's
- What is Token Licensing and how does it work?
- Do Token licenses require license keys?
- How do I Access & Manage Token Licenses?
- What is the "TLSTOK" License Increment?
- Can Tokens be mixed with floating licenses?
- What License Server version is required to use token licensing?
- How does the License Server Manage Tokens?

Passwords

- I lost my user ID and/or password. How can I recover them?
- My user name and password don't work. What's wrong?
- How do I change my password?
- How do I change my email address?
- Password Requirements

IBM Rational License Key Center

What is the IBM Rational License Key Center?

The IBM Rational License Key Center is an online license key procurement and management service that provides you easy access to the keys associated with your IBM Rational products. This service is hosted by Flexera Software, a leader in the electronic licensing industry and is accessible through the IBM web site.

Back to Top

What license keys can I manage using the IBM Rational License Key Center?

The License Key Center allows you to manage various styles of license keys offered across the Rational product portfolio. These include FLEXIm-based license keys and activation kits.

Back to Top

How do I get my license keys once I place an order with IBM?

When you place an order with IBM for Rational software products, the IBM Site Number associated with your order will be used as your IBM Rational License Key Center account ID. The primary contact and site technical contact will be setup as default "members" of your account. Those contacts will be sent an email that welcomes them to the IBM Rational License Key Center and gives them a temporary password link to log in.

Please review the "Getting Started" document posted at the following link. ftp://ftp.software.ibm.com/software/rational/web/lkc/GettingStartedEnglish.pdf

Back to Top

What is the name of the email account the IBM Rational License Key Center uses to send mail?

The IBM Rational License Key Center will send an email from 'rational-license-keys@flexnetoperations.com' with "IBM Rational License Key Center operated by Flexera Software" as the sender display name. Please be sure to check SPAM as sometimes the company email filters may be caught and not arrive within your inbox.

Back to Top

Does the order email show me the license keys I need?

No. When you log into the IBM Rational License Key Center you will see a list of license keys associated with the account. You can look up the order using the "View history" menu and see the keys associated with any given order. Additionally, the IBM Rational A-Z list has a complete listing of Rational offerings and the components included in each as well as associated license keys.

Back to Top

How long does it take for my keys to show up on the IBM Rational License Key Center after I place my order with IBM?

License keys for newly placed orders with IBM will typically flow into the License Key Center within 24 hours, Pacific Standard Time (PST).

Back to Top

Account, members, and login

What did IBM use as my IBM Rational License Key Center account ID?

Your IBM Ratioanl License Key Center account ID will be your IBM site ID. Each time you place an order against the same site ID, the license keys for that order will flow into the corresponding IBM Rational License Key Center account.

Back to Top

How can I add other users to my License Key Center account?

The Primary and Site Technical Contacts are automatically granted administrative privileges in the IBM Rational License Key Center. As administrators they can select Account members in the left hand navigation menu when logged into the IBM Rational License Key Center account and then Add New Member. They can also grant other members administrative privileges if desired by selecting Update Member Privileges.

Back to Top

Can users add themselves to my account without having an administrator manually add them?

Yes. Users can add themselves to any account by either selecting "Don't have a password?" from the IBM Rational License Key Center login The form will ask the user to enter their contact information, the IBM site number (the IBM Rational License Key Center account they want to join) and a sales order number corresponding to that site ID or account number.

If the Site ID only is entered a request will be sent to Primary site contact to review and approve access. Enter the sales order number from your original license purchase, not a support renewal order. If you do not have the original sales order number, contact your Primary Site Contact to obtain a copy of the original Proof of Entitlement. The information collected will not be used for any purposes other than issuing the licenses you have requested.

Why would I have multiple IBM Rational License Key Center accounts?

The IBM Rational License Key Center accounts correspond to your IBM site numbers and to your legacy Rational account numbers. You will have multiple IBM Rational License Key Center accounts if you have multiple IBM site numbers or if you purchased software from Rational prior to October, 2003, or from Telelogic prior to November, 2008.

Back to Top

Can I log into multiple accounts at one time?

No. If you have multiple accounts, the IBM Ratioanl License Key Center will ask you to select the account you wish to log into after you enter your password.

If I am logged into one account, how do I log into another account?

If you have multiple accounts, you will see a menu selection called "Switch account" on the left-hand menu bar. Selecting "Switch account" will show you the list of accounts to which you are a member and allows you to log into any of the accounts by selecting the account ID from the list.

Back to Top

Can I move my orders or license keys between accounts?

No. The license keys that appear in your IBM Rational License Key Center account are driven from the license part numbers on your IBM sales order when you purchased your software. The sales order is associated with the IBM site number that was listed on the order. The IBM site number is your IBM Rational License Key Center account ID. Since IBM does not allow you to move the license part numbers between IBM sites, you cannot move your license keys between accounts. Contact your IBM sales representative if you need to move license part numbers between sites in the IBM systems. Changes made to your information in the IBM system will be reflected in the IBM Rational License Key Center. *Please note, before a site to site product migration can be completed by IBM you need to return all registered licenses to the license pool to secure a successful migration.*

Back to Top

Can I consolidate all my license keys into one account?

The license keys that appear in your License Key Center account are driven from the license part numbers on your IBM sales order when you purchased your software. The sales order is associated with the IBM site number that was listed on the order. The IBM site number is your Rational License Key Center account ID. Contact your IBM sales representative if you want to merge license part numbers into one account in the IBM systems. Changes made to your information in the IBM system will be reflected in the License Key Center.

Please note, before a site to site product migration can be completed by IBM you need to return all registered licenses to the license pool to secure a successful migration.

Order Review

How do I see my orders on the IBM Rational License Key Center?

Select "View history" on the left-hand menu to see a list of orders associated with your account. Select the Sales Order Number to see the order details or select "License keys for this order" to see the keys associated with the order.

Filter by Account

For users who utilize View History on their IBM Rational License Key Center site, there is an option to allow End Users on multiple accounts the ability to view all the orders that their login has access to by aggregating the orders across those accounts. The View History display will support a switch for "Filter by Account" where the End User selects from the drop down list to view Orders for all accounts or a single account. The Order History results table also includes the Account Name to further differentiate the Account and Order relationships.

Back to Top

Will the IBM Rational License Key Center show me all IBM orders?

The IBM Rational License Key Center only contains show keys for Rational Brand products.

Will the Order Details screen show me all IBM products on my order or just Rational products?

The Order Details screen will show only the Rational products on your order.

Back to Top

Generating license keys

How do I get my license key?

Generating a license key for your product is a multi-step process: select the key you want, select the sales order against which you want your key associated, enter quantities and host information, then finally generate the key and download it. We recommend viewing the tutorial video which will walk you through the process outlined below.

Back to Top

What is Fixed Term licensing?

FlexNet based license - A FlexNet based Fixed Term License for both Floating and Authorized User will expire at the time of the contract of the term expire

Jazz based license - A Jazz based Fixed Term license for both Floating and Authorized gives you an activation kit that will expire at the time of the contract of the term expire

LUM License Technology (constellation) - A LUM based Fixed Term license for both Floating and Authorized will give you a Floating constellation kit that will expire at the time of the contract of the

term expires. The system is not able to support LUM Fixed Term Auth kit which is the reason to why you get a Floating constellation kit for Authorized User using this license technology.

Back to Top

Date Based Licensing

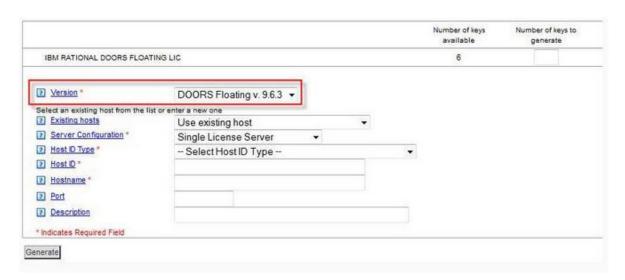
As of May 2, 2016 IBM no longer uses datebased licensing. This means support renewal orders will no longer flow to the License Key Center as they had in the past. There is no longer a need to log into the License Key Center to upgrade your license key when you renew support in order to be able to use the latest product release.

This change affects the following products; Doors, Rhapsody, Synergy, Change, Publishing Engine, Statemate, Tau, Systems Tester, Logiscope, SDL and TTCN Suite.

Please note: This applies as long as you have a key generated with the latest version available showing in the License Key Center. If you have an older datebased key you will need to Return it and Generate a new key in order for this to take affect. The latest version available will automatically be populated in the Version drop down field after you select Generate Keys, this version is backward compatible so it will also work with earlier product versions.

The following are the latest Versions as they will be displayed at the License Key Center generation page; Doors 9.6.3, Rhapsody 8.1.3, Synergy 7.2.1, Change 5.3.1, Publishing Engine 2.0.1, Statemate 4.6.1, Tau 4.3.1, Systems Tester 3.3.1, Logiscope Latest Version, SDL Suite 6.3.1 and TTCN Suite 6.3.1.

Example of the latest version available on the key Generation screen for Doors:



Example of a Doors non datebased key from a license.dat file:

INCREMENT DOORS telelogic 9000.6 permanent 1 00C050E0436BB658FD91 \
VENDOR_STRING=T10-999999 ISSUED=22-Mar-2016 BORROW=2160 \

SIGN2="03BD 4614 F51F FA38 D76A 60E2 53D9 E393 9B7F 91F7 F4FD \
889B 1B84 CDCB 7BD7 196E F4C2 383A 6104 2701 9874 82D3 5112 \
BF6C EAAA A2E1 5ED4 5EAA 7BE9 EA5C"

Example of a datebased key from a license.dat file:

INCREMENT DOORS telelogic 2016.1215 permanent 1 7090D0902579263C207E \
VENDOR_STRING=T10-999999 ISSUED=22-Mar-2016 BORROW=2160 \
SIGN2="1CDE 99BD B28B 28F2 F656 C907 8686 5833 9BF6 F793 8DCF \
25B1 41E6 B579 40A8 125D 4B29 6362 9E8C DD92 8A2E E68D FB92 \
B3EF 710E 69C2 0C03 EAF4 F09F 5D0C"

After generation the new Non datebased license files will show the following versions in the license.dat file; Doors 9000.6, Rhapsody 8000.13, Synergy 7000.3, Change 5000.3, Publishing Engine 3000.0, Statemate 4000.6, Tau 4000.3, Systems Tester 3000.3, Logiscope 6000.6, SDL Suite 6000.3 and TTCN Suite 6000.3.

To check your license.dat file go to View Keys by Host in the left hand navigation menu of the License Key Center. Locate the hostname and click on the hyperlink underneath and then select View Details.

This change has been made to streamline all products within this License Key Center to use the same license key structure. This change does not automatically entitle you to the latest version of the software. Please ensure you are following the IBM Support & Subscription renewal policy at all times and refer to your S&S Proof Of Entitlement to verify your entitlements.

Back to Top

Token Licensing

What is Token?

Token is a different type of floating license which has a pre defined token value instead of the traditional license quantity for each product.

Each product within the token order consumes a pre defined token value for each active user of that product. The total number of tokens in the order can be used across users and across the designated products in the order. On start up, a product configured to use tokens will only be able to obtain a license if sufficient unused Tokens are available.

When someone stops using a product, the tokens are returned to the token pool and are available for someone else to utilize.

Can Tokens be mixed with other types of licensing?

Yes, mixing regular floating and Token licenses on the same license server is fine

When mixing traditional floating with tokens following applies;

- Floating licenses are to be consumed first
- Token license increment has attribute sort=150 which controls the order of usage if mixed with floating

Authorized User license can not be mixed with token.

Tokens cannot be borrowed.

How do I register the license server for my Token order?

The server registration doesn't differ from how you configure a traditional floating license. The only difference is that you do not specify what products within the token order to use on each server(s). All products in the token order will be included when the license key is generated.

Back to Top

Borrowing License functionality

What is borrowing?

Some Rational products support borrowing license functionality.

License Borrowing enables a user to 'check-out' a floating license from a license server for use on a machine (laptop usually) that will not be connected to the server (while on travel). At the end of the Borrowing period the license is returned into the floating license pool.

The borrowing functionality is a pre defined capability. If the product support borrowing the following license attribute can be seen in the license key "borrow=2160". If that statement is not visible in the license key the functionality is not supported.

How long may a user borrow a license?

Borrowable licenses <u>lkc22</u>may be borrowed for a maximum of 90 days. Your license administrator may specify a maximum borrowing period of less than 90 days using the FLEXnet options file.

Tokens and Nodelocked licenses cannot be borrowed.

Back to Top

What is a Dongle?

A dongle is a small piece of hardware that connects to a computer and plugs into a serial port and works as a computer HostID. The dongle needs to be connected to the computer and the license file for the software application needs to be installed on the same computer. The license should be generated based on the Dongle ID which is written on the actual hardware dongle

Licenses generated using a dongles HostID ends up as a nodelocked key "uncounted" and can not be used as a server.

How can I purchase a dongle for my Rational products?

To purchase a Dongle please contact Julie Greenall at: jgreenall@flexerasoftware.com or call at; 044(0)1928 706 346. Julie is the WW Account Manager for Dongles. Flexera Software will completely handle the sales transaction, both quoting and fulfillment.

Back to Top

How do I upgrade my License(s) using the Renewal Order?

For Products using Datebased Licensing version you will see both the original license order plus any renewal order for that product, more information about Datebased licensing please see section above "Date Based Licensing, what is that?"

The License Key Center will list the Renewal Order as a separate line in your account. To apply this to your license key you select the Renewal Order and it will give you the licenses associated to choose from. You add the quantity of the renewal per product and re-generate the key.

Note, only registered licenses shows up in the list of licenses available for upgrades using the renewal order.

Important! The Original License Order and the Associated Renewal Order have to be registered on the same IBM Site ID. To be able to apply the renewal order and upgrade the license keys the orders need to reside on the same License Key Center account ID which is the same as your IBM Site ID

Back to Top

Why do some products show multiple license keys on the Select License Keys screen?

Many Rational products are bundled offerings that include multiple components, each having its own license key. If you purchased a bundled product, the License Key Center will show you the keys associated with the bundle on the Select License Keys screen. For example, if you purchased the Rational ClearQuest and ClearQuest MultiSite bundle the Select License Keys screen will show a ClearQuest and a ClearQuest MultiSite key associated with the item you purchased

What do I enter for the number of license keys to generate?

For floating license keys, you can enter up to the number that is equal to or less than the number of keys you have available. For example, if you bought 100 licenses of Rational ClearQuest, the first time you generate keys against that purchase, you can enter any number between 1 and 100. The License Key Center will then generate a single license key with the quantity built into the license key. In the above example, let's say you bought 100 ClearQuest licenses and wanted to put 80 keys onto your main license server. Enter "80" as the number of keys to generate. The License Key Center will create a single ClearQuest key for you with a quantity of 80 built into the key. This allows you to install the single key on your license server machine and have 80 users running Rational ClearQuest concurrently; each checking out one key from your license server. Once you have generated the key with a quantity of 80, the License Key Center will show that 20 ClearQuest keys are now available.

What is a host ID and host name and where do I find them?

The host ID and hostname are attributes associated with your host machine. The page that asks you to enter your host information is equipped with pop-up help that will give you specific instructions.

What is the Port number used for?

For FLEXIm floating licensing environments, the client machines will check out license keys from the license server by communicating with the server on a TCP/IP port. By default, Rational client machines will use TCP/IP port 27000. If you would like to force the client and license server to communicate with one another on a port other than 27000, you can enter the port number.

What is the Host Description?

The Host Description is a free-form optional field available to you to add comments/useful info on host level.

Back to Top

What are redundant license servers and how do they work?

This configuration is optional.

Redundant servers are a set of 3 nodes designated to serve the same license file. The license file has 3 SERVER lines. Imgrd is started on all 3 nodes. One of the servers starts out as the master server and serves licenses. If the master goes down, another server takes over as master. Redundant servers require a quorum of 2 servers to be up, or no licenses are served.

All the three servers should have stable network communication between themselves. These three-server redundant servers should have excellent communications. This form of redundancy requires that the servers exchange heartbeats periodically, and poor communications can cause poor performance. You should never configure redundant servers with slow communications or dialup links. In all cases, an effort should be made to select stable systems as server nodes; in other words, do not pick systems that are frequently rebooted or shut down for one reason or another. The three server nodes can be any supported server nodes - it is not required that they be the same architecture or operating system.

What hosts are listed in the Existing License Hosts drop-down?

The "Use Existing Hosts" list will show you any host that has license keys registered to it from the account.

Returning and moving license keys

How do I move a license key to a new host?

The License Key Center allows you to move a license key to a new host machine using a three step process:

- 1. Select the "Return" button first associated with the key you want to return.
- 2. Update your license key installation on the original host to reflect the change.
- 3. Generate a new key for the new host.

Back to Top

What does "returning" license keys mean and how does it work?

The "View and return keys" feature will show you the license keys you currently have generated and gives you the opportunity to "return" them to your License Key Center account, making them available again. The act of returning the key tells IBM that you will no longer use the key. Once the key is returned, it becomes available again for you to generate for another host.

Back to Top

Can I return a portion of the license keys I have generated previously?

No, the return option will return the entire quantity of license keys back to the available pool. For example, if you currently have a ClearQuest key with a quantity of 100 and you want to return 20, selecting the "return" feature will return all 100 back to the available pool. Once the key is returned you can get a new key for a quantity of 80 for the same host.

Back to Top

What should I do after I return the keys?

The return function tells IBM that you are no longer using the license key and will make the key available again. Once you use the return function, it is important to update your host machine to reflect the change. If you returned keys for one product, but still have license keys for another Rational product on your host machine, get an updated license key file using the following process:

- 1. Select "View keys by host" from the left-hand menu
- 2. Select your host machine from the list of hosts
- 3. Select the "View Details" button
- 4. Download a new license key file for your machine
- 5. Install the new license key file

Rational Development & Test Environment for System z (RD&T)

Number of Licenses

Each user accessing a separate instance of a virtual System z machine requires a separate license. Individual users are licensed to a specific instance of a virtualized System z. The total number of licenses for all serial numbers must not exceed the number of licenses to which you are entitled.

Back to Top

Server Instances

For each serial number, you should enter the total number of virtual System z machine instances that you intend to enable with the specific USB hardware key identified and a number of licenses. Each instance created for a serial number must be associated with a license for at least one user.

Back to Top

Emulated Central Processor

Each emulated Central Processor or CP within an instance of a virtual System z machine requires a separate license. For each serial number, you should enter the total number of emulated CPs that you intend to enable with that specific USB hardware device. The total number of emulated CPs for all serial numbers must not exceed the number of licenses to which you are entitled. To add or remove licenses or change the number of instances for a hardware key (serial number) which already has at least one license associated with to it, you should first return the previous licenses and then generate a new update file which includes all of the licenses you want to associate with that hardware key.

Dealing with expirations and renewals for RD&T The RD&T emulator sends warning messages to the Linux console ahead of USB hardware device license expiration.

For Perpetual licenses USB hardware device licenses are set to expire one year from date of license generation. Customers may return previously generated licenses at any time and generate a new license file.

For Term licenses If term expiration occurs in more than one year, USB hardware device licenses are set to expire in one year from date of license generation. Licenses can be returned and generated again before term expiration. If term expiration occurs in less than one year, USB hardware device licenses are set to expire at term end. After term end, licenses cannot be generated in the RLKC.

Entering the Serial Number With the latest revision to the RLKC, customers must now enter the entire serial number of the USB Hardware Device, not just the last (5) digits. For example, 03-00123.

Token Licensing

Token Licensing FAQ's

The full document for Token Licensing FAQ's can be found on the Rational Common Licensing site.

https://www.ibm.com/developerworks/community/wikis/home?lang=en#!/wiki/Wa5f0e71b4f3c_4bc8_adb1_be13c9277040/page/Token%20Licensing

Back to Top

What is Token Licensing and how does it work?

Tokens are the most flexible method of licensing. It is a floating license key where each license feature has a pre defined token value replacing the static feature quantity. It's available for selected Rational products and available as Fixed Term only. In a token environment each product consumes a pre defined token value per license and not a predefined quantity per license as it does in a traditional floating environment. The license key has a pool of tokens from which the license server automatically calculates the tokens being checked in and out. Tokens are consumed / released when a product checks in/out licenses from the license server the same way a traditional floating license is handled.

The users are able to obtain a license as long as sufficient unused Tokens are available for the entitled token products. When someone stops using a product, the tokens are returned to the token pool and are available for someone else to utilize.

Back to Top

Do Token licenses require license keys?

Yes it does. The Token concept is 100% controlled by the actual license key installed on the license server. The license key is specific to tokens and based on the actual order in Rational License Key Center if the order is a token order the license key ends up as a specific token license key/jar file.

Back to Top

How do I Access & Manage Token Licenses?

You access and manage Token licenses in Rational License Key Center (LKC) as you would for any other license keys from IBM Rational. It's almost like traditional floating licenses with exception that it is like a "token product package". You can not split/manage the different token products when generating the keys however you can split the total quantity of tokens across different servers.

What is the "TLSTOK" License Increment?

The TLSTOK license feature is the master token feature holding the total quantity of the tokens. On start up, a product will only be able to obtain a license if sufficient number of tokens is available.

Can Tokens be mixed with floating licenses?

Mixing regular Floating and Token licenses on the same license server is not recommended. We've seen issues were different versions of products are being mixed with non-supported token versions which sometimes ends up in errors. However, if the same product versions are being used we have not encountered any issues and the default check out order is floating before tokens.

Back to Top

What License Server version is required to use token licensing?

Rational token products require the IBM Rational Common License Server 8.1.x

Back to Top

How does the License Server Manage Tokens?

The license server automatically calculates the tokens being checked in and out. Tokens are consumed when a product requests a license and released when a product releases the license. Product will only be able to obtain a license if sufficient unused Tokens are available for the entitled token products.

Back to Top

Passwords

I lost my user ID and/or password. How can I recover them?

You can use our Password Finder. On the login screen for the IBM Rational License Key Center, click on "Forgot your password", enter your email address and we will email your password information to you.

Back to Top

My user name and password don't work. What's wrong?

First, passwords are case sensitive; make sure you are entering your password using upper and lowercase letters where appropriate. Also, do not confuse a letter in your password for a number (such as the letter I for the numeral 1). If you cut and paste the information into a window, be careful not to copy any spaces along with the text string. If you are certain that you entered the information correctly and still cannot log in, contact Support.

Back to Top

How do I change my password?

You can use the <u>Change Password</u> feature to create a new password for yourself. Before creating your password you will be required to correctly enter your current password. If you don't remember your current password you can use our <u>Password Finder</u> to have your current password emailed to you.

How do I change my email address or company name?

We do not allow customers to change their email addresses on their own since their email address is their login ID. Similarly, the company name is what links you with other users within your organization and should only be changed if it is incorrect or if you have changed companies.

Back to Top

Password Requirements

The password must be at least 8 characters and maximum 15 characters in length in length, contain a mix of alphabetic and non-alphabetic characters (numbers, punctuation or special characters), or a mix of at least two non-alphabetic characters. The password cannot contain the userid and it cannot be reused for 2 years.

```
Accepted characters:
```

```
ALPHA_CHARS = "abcdefghijklmnpqrstuvwxyzABCDEFGHIJKLMNPQRSTUVWXYZ"

NUMERIC_CHARS = "123456789"

SPECIAL_CHARS = "*$-+?_&=!%{}/#"

PUNCTUATION_CHARS = ",:"

Not Accepted / Not Categorized Characters: ~`@^()"';.<>[]\|oO0
```