

Token Licensing Concepts and Management

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Introduction to Token Licensing

Token based licensing is an option, along with floating and authorized user licensing, within the Rational portfolio. Technically, the basis of token licensing is on the traditional floating license mechanism and process. However, when it comes to how the license check out (consumption) works, it has a different behavior.

The token based licensing model allows you to buy a certain number of tokens for defined Rational products that use the token-based licensing model.

In a token environment, each product consumes a predefined token value, not a predefined quantity as it does in a traditional floating licensing environment. The license key has a pool of tokens from which the license server automatically calculates the tokens being checked in and out across users and products. Tokens are consumed and released when a product checks the licenses in or out from the license server using the same policy floating licensing. The token solution is available for select Rational products and is only fixed term.

In token based licensing you “reuse” the same licenses for different products and when the need arises.

Advantages of Token Licensing

Flexibility

Tokens are the most flexible method of licensing. It is a floating license key where each license has a predefined token value replacing the static license quantity. Tokens allow you to maintain a “token pool” of licenses usable across users, using the right Rational product at the right time throughout your development cycle.

The IBM Rational License Key Server automatically calculates the tokens being checked in and out by different products. Tokens are consumed and released when a product checks in or out licenses from the license server.

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

For example: You have 720 total tokens to be used for IBM Rational DOORS and IBM Rational Synergy; All 720 installed on the same license server. Rational DOORS requires ten tokens per user and Synergy requires six tokens per user. In this example, your entitlement enables you to have any combination of users using Rational DOORS and Rational Synergy at one time. This capability exists as long as you do not exceed 720 tokens.

As a result you can have any of these example combinations of product usage:

- 72 concurrent Rational DOORS users (720 tokens at 10 tokens per user)
- 120 concurrent Rational Synergy users (720 tokens at 6 tokens per user)
- 42 concurrent Rational DOORS users (420 tokens) and 50 Rational Synergy users (300 tokens)

As you can see from this example, tokens allow you to vary the actual usage based on the needs. This capability provides flexibility across an organization.

Improved licensing strategy

Investment in a flexible licensing strategy provides optimal use of Rational solutions based on your development life cycle. Licensing options might include authorized user, floating, fixed term, or perpetual (OTC – One Time Charge) licenses. Most organizations use an effective mix of multiple schemes to drive the optimal productivity of their software delivery teams.

Practitioners can use the right Rational tool at the right time during the development life cycle. The tokens allow for current product use as well as factoring additional tools that are potentially required later in the life cycle.

Generating Token Licenses in Rational License key Center

See Figure 1 for an example of how a token order looks when logged into the IBM Rational License Key Center:

Select License Keys

Below you will find a box for each product or unique sales order that contains the item you selected on the previous page. The next screen will allow you to enter the quantity and host details for this transaction.

Items ordered:

Part Number	Item ordered
D0C6DLL	IBM RATIONAL CLEARCASE SYS Z INITL TOKEN TERM LIC
D0BEBLL	IBM RATIONAL CHANGE INITIALTOKEN TERM LIC
D0BF9LL	IBM RATIONAL SYNERGY INITL TOKEN TERM LIC

Sales Order Number	Purchase Order Number	License Key Expiration	Original Maintenance End Date	Order Quantity
Tokens	test	Aug 26, 2013	Aug 26, 2013	250
Total number of licenses purchased				250

LICENSE KEYS FOR THIS ORDER
 Select the checkbox next to the key you would like to generate or view. [Help](#)

250 Available

Next

Figure 1

The **Items** ordered list shows all products purchased under the token agreement.

Required Information

Enter required information in below fields, for help see the pop-up for each input field.

	Number of keys available	Number of keys to generate
IBM RATIONAL CLEARCASE SYS Z INITL TOKEN TERM LIC IBM RATIONAL CHANGE INITIALTOKEN TERM LIC IBM RATIONAL SYNERGY INITL TOKEN TERM LIC IBM RATIONAL DOORS INITL TOKEN TERM LIC	250	<input type="text" value="200"/>

Server Configuration *	Single License Server
Host ID Type *	Disk Serial Number (Windows only)
Host ID *	00A6C951
Hostname *	TOKENS
Port	
Description	

* Indicates Required Field

Generate

Figure 2

The decision on the number of tokens provided with each server is based on the number of users and the token value of each product.

Understanding the token license key file

Figure 3 shows a fragment from an example license.

```

SERVER TOKENS DISK_SERIAL_NUM=00A6C951 27000
VENDOR ibmratl
VENDOR telelogic
VENDOR rational
INCREMENT TLSTOK ibmratl 2.0 14-sep-2013 200 vendor info="0|IBM \
Rational Main Token Feature|0" ISSUER=IBM ISSUED=28-Sep-2012 \
AUTH={ rational=( LK=6FFEE3DC4473) ibmratl=( SIGN="0008 CBAC \
C3E1 9D4B CB83 1DF2 B805 7C00 E634 5216 AA08 C2DB 95A9 6D6D \
F6AE") telelogic=( LK=7254B6B89E11E9B8B4A8 SIGN2="1545 8F83 \
8C75 8007 9506 EB45 CFB9 443D 88A6 D279 D16C 4F46 594B 57FD \
E2BA 06B7 BB67 856E 8A35 538E A9B7 0C92 83E7 2BF1 A13E 4262 \
12FF FC55 7443 786B") }
INCREMENT DOORS telelogic 2012.08112 11-aug-2012 1 E030F000E68CF6D9C892
VENDOR_STRING=IBM:t.TLSTOK,1.0.DOORS,10.DOORS sort=150 \
ISSUED=16-May-2012 SIGN2="1449 DD8A B098 2EE3 9629 356A C2D2 \
D9D1 79E7 C9CA BDF0 0FE7 0C5A 295F D741 0563 7B9B ED0B 0F80 \
EE29 DF64 494D 4D55 FB2B 2BAF DEAD C388 E66E D538 0EB8"
INCREMENT ClearQuest rational 1.100002 14-oct-2013 1 06F12D08103C \
VENDOR_STRING="0|Floating|0|0:t.TLSTOK,2.0.ClearQuest,5:ClearQuest \
" OVERDRAFT=0 sort=150 DUP_GROUP=UH ISSUED=16-May-2012
INCREMENT ibmrptsoa ibmratl 7.00002 14-sep-2013 1 \
VENDOR_STRING="0|Floating|0|IBM:t.TLSTOK,2.0.ibmrptsoa,10:SERVICE \
TESTER FOR SOA QUALITY" OVERDRAFT=0 sort=150 DUP_GROUP=UH \
ISSUED=28-Sep-2012 SIGN="0092 24BD 8242 15C4 FCC8 C0A8 4062 \
9500 C523 B595 6E10 42FB AF98 521B BB2A"
INCREMENT JazzToken ibmratl 3.02 14-sep-2013 1 \
VENDOR_STRING=IBM:t.TLSTOK,2.0.JazzToken,1:JAZZ
sort=150 ISSUED=28-Sep-2012 SIGN="0092 24BD 8242 \
15C4 FCC8 C0A8 4062 9500 C523 B595 6E10 42FB AF98 521B BB2A"
    
```

TLSTOK Token master feature indicating the total number of tokens generated for this server, in this case 200

Each license increment has a pre-defined token value
 DOORS, 10
 ClearQuest, 5
 ibmrptsoa, 10
 JazzToken, 1

Figure 3

Items of note with the license file

The **INCREMENT** line in a token license key is the same listed features as a traditional floating key. However, the quantity is always "1" on each line. The vendor string then holds the token value of each feature, which is the actual number of tokens that checked out when in use.

For example: When a Rational DOORS session begins, the token pool of 200 will decrease by ten to 190. When the session ends, the token pool returns to 200.

This is automatically performed by the Rational License Key Server. With all tokens in use, it is not possible to use more products unless a feature checks in. At that point, the program releases the tokens to the pool.

The **sort** attribute is 150 by default. This default allows the correct order of token licensing usage if mixed with non-token licenses. Traditional floating licenses consume first before any tokens when sharing the same license server.

Jazz Token Licensing

The IBM Rational Jazz token license increment is different, since it represents the complete set of Jazz based products used in a token environment. Each Jazz based product checks out the Jazz token increment as many times as required by each product.

For example: When an IBM Rational Team Concert contributor session starts, the Jazz Team Server requests one Jazz token five times. This request occurs because the token value for that product is five.

There is a requirement for the FLEXlm based Rational License Key Server in addition to the Jazz Team Server, from which the Jazz product installations acquire their licenses. The servers can operate independently or as part of a Rational Team Concert installation.

The servers take care of the check in and out focus as long as there is a correct installation of both keys. The Jazz server communicates with the Rational License Key Server, and the check in or out of tokens occurs automatically.

If you have both Jazz products and non-Jazz products available as tokens, then there are two sets of available keys when generating licenses in Rational License Key Center: One is for the FLEXlm based Rational License Key Server, the other is the Jazz ".jar" file.

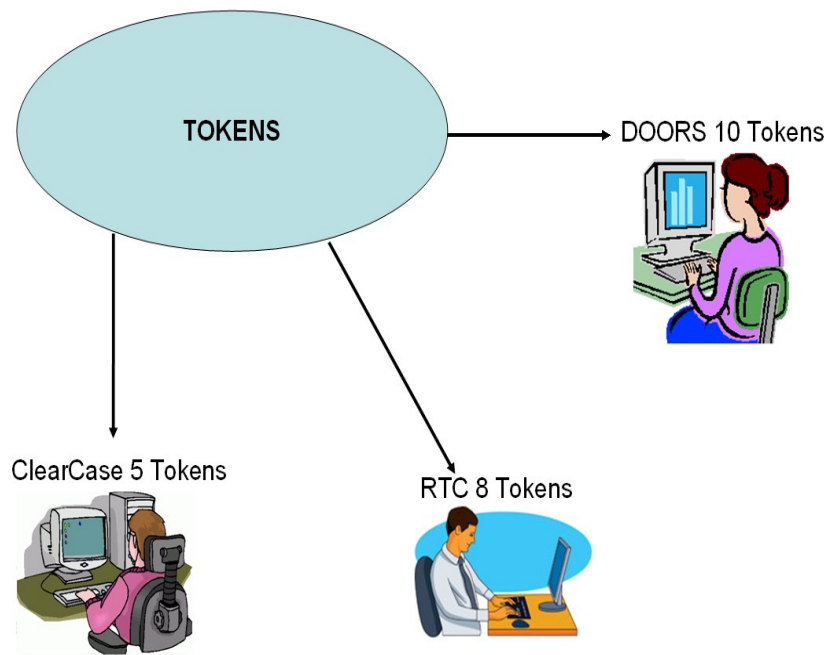


Figure 4

Rational License Key Server

Rational License Key Server V8.1 addresses these two goals:

- Consolidate legacy license server daemon support for both Rational and Telelogic.
- Provide support of the token concept for any Rational product that offers tokens.

Rational License Key Server is the only server that supports token licensing for the complete Rational portfolio. The heritage Telelogic License Server V1 and V2.0 only supports token based licensing to all heritage Telelogic token products.

Rational License Key Server V8.1 incorporates all vendor daemons (Telelogic, Rational & ibmratl) into one server. As long as a product is available within the token environment, it is supported by the license server.

Understanding a token based license log

Perform a status enquiry using the license management tools after the rereading the license file. The enquiry lists all the features, included in the license file and the total number of tokens available. For example:

```

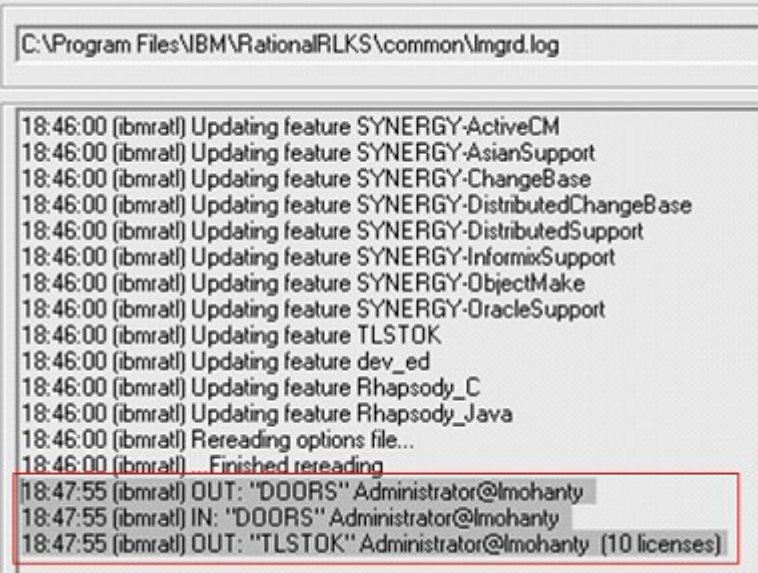
-----
Status
-----

Flexible License Manager status on Thu 8/11/2011 18:46
ibmratl: UP v11.8Feature usage info
Users of DCCC: (Total of 1 license issued; Total of 0 licenses in use)
Users of DCCQ: (Total of 1 license issued; Total of 0 licenses in use)
Users of DOORS: (Total of 1 license issued; Total of 0 licenses in use)
Users of DRL: (Total of 1 license issued; Total of 0 licenses in use)
Users of SYNERGY-DistributedSupport: (Total of 1 license issued; Total of 0 licenses in use)
Users of SYNERGY-InfomixSupport: (Total of 1 license issued; Total of 0 licenses in use)
Users of SYNERGY-ObjectMake: (Total of 1 license issued; Total of 0 licenses in use)
Users of SYNERGY-OracleSupport: (Total of 1 license issued; Total of 0 licenses in use)
Users of TLSTOK: (Total of 200 licenses issued; Total of 0 licenses in use)
Users of dev_ed: (Total of 1 license issued; Total of 0 licenses in use)
Users of Rhapsody_C: (Total of 1 license issued; Total of 0 licenses in use)
Users of Rhapsody_Java: (Total of 1 license issued; Total of 0 licenses in use)

```

Figure 5

Figure 6 is what a log displays after the check out of a Rational DOORS license. In this example, a Rational DOORS license consumes ten tokens.



```
C:\Program Files\IBM\RationalRLKS\common\lmgrd.log

18:46:00 (ibmratl) Updating feature SYNERGY-ActiveCM
18:46:00 (ibmratl) Updating feature SYNERGY-AsianSupport
18:46:00 (ibmratl) Updating feature SYNERGY-ChangeBase
18:46:00 (ibmratl) Updating feature SYNERGY-DistributedChangeBase
18:46:00 (ibmratl) Updating feature SYNERGY-DistributedSupport
18:46:00 (ibmratl) Updating feature SYNERGY-InformixSupport
18:46:00 (ibmratl) Updating feature SYNERGY-ObjectMake
18:46:00 (ibmratl) Updating feature SYNERGY-OracleSupport
18:46:00 (ibmratl) Updating feature TLSTOK
18:46:00 (ibmratl) Updating feature dev_ed
18:46:00 (ibmratl) Updating feature Rhapsody_C
18:46:00 (ibmratl) Updating feature Rhapsody_Java
18:46:00 (ibmratl) Rereading options file...
18:46:00 (ibmratl) ... Finished rereading
18:47:55 (ibmratl) OUT: "DOORS" Administrator@lmohanty
18:47:55 (ibmratl) IN: "DOORS" Administrator@lmohanty
18:47:55 (ibmratl) OUT: "TLSTOK" Administrator@lmohanty (10 licenses)
```

Figure 6

When all token are in use, a client machine attempting to checkout a Rational DOORS license receives the error in figure 7:



Figure 7

General information and best practices

- Make sure you have the latest version of Rational License Key Server. Version 8.1 replaces Rational License Server V7 and Telelogic License Server TLOG V2.0. Rational License Key Server V8.1 uses FLEXlm V11.8.
- Authorized user licenses cannot be mixed with token licenses.
- You cannot dock token licenses to a dongle.
- Tokens do not allow borrowing capability. However, you can use disconnected functionality where applicable.
- Product specific linger time or time out follows the same policy for tokens as with a traditional floating license.
- Product license increment name for tokens is the same as for traditional floating licenses.
- Managing tokens across multiple servers means that you can split the token quantity across different license servers. However, you cannot split out products within the token order.
- Token licensed products support the same platforms as traditional floating licenses. You are essentially using the same product, but the licensing model is different.
- Make sure that all Rational software is on token supported product versions. If any users require older versions of the products, you must plan accordingly. If you migrate to token licensing, all versions of the software in use must be on versions that support the tokens license scheme. There is no option to run software versions from before the release where there is an implementation of token support. For example, Rational ClearCase V7.1.2 is the first release that can use token licensing. You cannot use token licensing for Rational ClearQuest versions before V7.1.2.
- Mixing floating and token licenses on the same license works perfectly fine and the order of usage is following:
 1. The first consumed licenses are the floating licenses.
 2. The token license increment has the attribute **sort=150** that controls the order of usage if mixed with floating licenses.
- Token time out is less or equal to traditional floating license usage, NEVER more.

For Jazz based products in version V4.0.3 and up the time out has changed for **tokens only**, it can be set at 30 minutes. In version V4.0.2 and earlier versions tokens time out is 2h, which is equal to traditional usage of Jazz based products.

Licensing support

- IBM Service Request: <http://www.ibm.com/software/support/probsub.html>
- Email Support: <http://www.ibm.com/software/rational/support/eps/>
- Phone Support: <http://www.ibm.com/software/rational/support/contact.html>

References

Rational Licensing Support page:

<http://www.ibm.com/software/rational/support/licensing/>

Rational Common Licensing Information Center:

<http://publib.boulder.ibm.com/infocenter/rational/v0r0m0/index.jsp>

Using the Rational License Key Center:

http://publib.boulder.ibm.com/infocenter/rational/v0r0m0/topic/com.ibm.rational.license.doc/topics/t_access_license_key_center.html

Setting up the Rational Common Licensing token service keys:

http://pic.dhe.ibm.com/infocenter/clmhelp/v4r0/topic/com.ibm.jazz.repository.web.admin.doc/topics/t_setup_rcl_service.html

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