MICRO FOCUS

GroupWise TeamWorks 18.0.1

Installation and Deployment Guide

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Legal Notice

Contents

About This Guide

Production Deployments

To create a production-viable, best practice TeamWorks deployment, complete the sections below in the order presented.

Test and Evaluation Deployments

To create an evaluation or test deployment, see Appendix A, “Creating an All-in-One Deployment,” on page 41.

Audience

This guide is intended for TeamWorks Administrators.

Feedback

We want to hear your comments and suggestions about this manual and the other documentation included with this product. Please use the **comment on this topic** link at the bottom of each page of the online documentation.

Documentation Updates

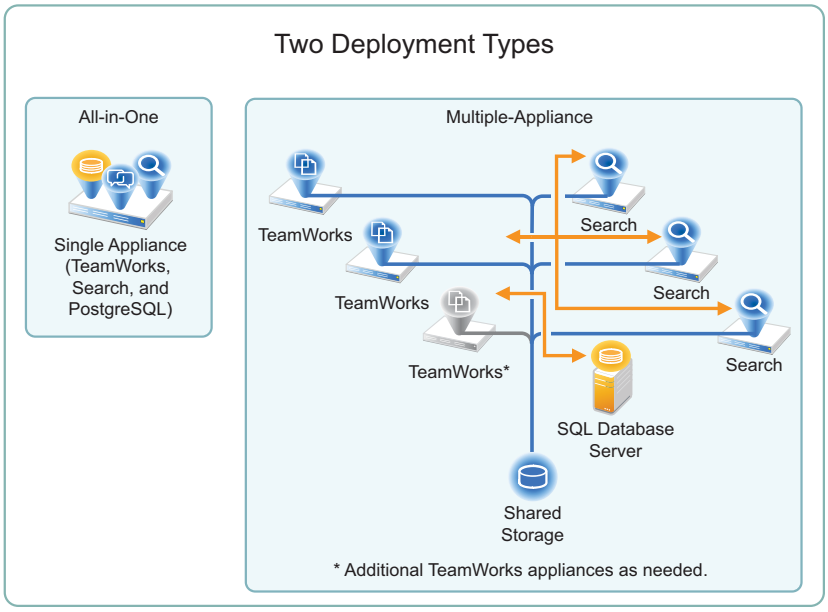
For the most recent version of this guide, visit the TeamWorks Documentation web site (http://www.novell.com/documentation/teamworks-18).

Additional Documentation

For other documentation on TeamWorks, see the TeamWorks Documentation web site (http://www.novell.com/documentation/teamworks-18).

1 Start Here

You can deploy TeamWorks in two different ways.



Micro Focus recommends multiple-appliance deployments as a best practice for the following reasons.

All-in-One	Multiple-Appliance
◆ One All-in-One Appliance ◆ No fault tolerance—Single Point of Failure ◆ Not expandable beyond a single All-in-One appliance	◆ Multiple Appliances ◆ Fault-tolerant TeamWorks services ◆ Expandable by adding TeamWorks appliances, disk space, or RAM as needs increase

To deploy an all-in-one appliance, follow the instructions in Appendix A, “Creating an All-in-One Deployment,” on page 41.

Otherwise, continue with Chapter 2, “Planning Is Important,” on page 9.

2 Planning Is Important

Creating a successful TeamWorks deployment requires that you

1. Involve pertinent stakeholders.
2. Conduct a thorough needs assessment.
3. Plan your deployment based on the needs assessment.

The sections that follow assume that you have:

1. Completed the planning processes outlined in the *TeamWorks 18.0 Planning Your TeamWorks Deployment—Best Practices* guide.
2. Filled in the TeamWorks 18 Planning Worksheets associated with the Planning—Best Practices guide.

3 System Requirements

Multiple-Appliance Deployments Are the Focus of This Guide

All-in-One deployments are covered in Appendix A, “Creating an All-in-One Deployment,” on page 41.

The following sections outline platform, version, and other requirements for your multi-appliance TeamWorks deployment.

Administrative Workstations and Browsers

Table 3-1 *Administrative Workstations and Browsers*

Platform	Browser	Requirement
Windows, Mac, or Linux	Mozilla Firefox	Latest version
Capable of running a listed browser	Microsoft Internet Explorer	11
	Microsoft Edge	Latest version
	Chrome	Latest version
	Safari	Latest version

Appliance Disk Space

- See Worksheet 14—Storage Planning Summary

Planning for disk space varies widely according to organization needs and the planning process is covered in the *TeamWorks 18.0 Planning Your TeamWorks Deployment—Best Practices* guide.

General guidelines are summarized in the following sections of the Planning Best Practices guide:

- Using Worksheet 10 - TeamWorks Appliances

- Using Worksheet 11 - Search Appliances
- Using Worksheet 12 - SQL Database

Appliance Shared Storage (/vashare Mount Point) Platforms

- See Worksheet 14—Storage Planning Summary

The TeamWorks appliances in an Multi-appliance deployment access a commonly-shared NFS storage disk that you will identify and create in Chapter 4, “Setting Up NFS Shared Storage,” on page 17.

Table 3-2 *Shared Storage Platforms (/vashare Mount Point)*

Protocol	Requirement
NFS	Exported mount point on one of the following: ◆ SLES 11 SP4 ◆ SLES 12 NFS on Windows is not supported.

Appliance Memory and CPU

Table 3-3 *Memory and CPU*

Appliance	Recommended
TeamWorks	◆ 8 GB RAM 1.5 GB Operating System 6.5 GB Java Heap ◆ 4 CPUs
TeamWorks Search	Less than 1,000 Users ◆ 8 GB RAM ◆ 2 CPUs More than 1,000 Users ◆ 12 GB RAM ◆ 2 CPUs

Appliance	Recommended
PostgreSQL	Less than 1,000 Users ◆ 8 GB RAM 2 GB Operating System 2 GB Memcached 4 GB Java Heap ◆ 2 CPUs More than 1,000 Users ◆ 12 GB RAM 2 GB Operating System 3 GB Memcached 7 GB Java Heap ◆ 2 CPUs

Web Application Access

Table 3-4 *Browsers for Web Application Access*

Platform	Requirement
Linux	Mozilla Firefox; Google Chrome (latest versions)
Windows	Microsoft Edge Microsoft Internet Explorer 11 Mozilla Firefox; Google Chrome (latest versions)
Mac	Safari; Mozilla Firefox (latest versions)

TeamWorks Software

You will download and prepare the TeamWorks software in Chapter 5, “Downloading and Preparing the TeamWorks Software,” on page 19.

IP Addresses

Each appliance requires the following.

Table 3-5 *IP Addresses*

Component	Requirement
IP Address	◆ A static address that is associated with a DNS host name. Example: 192.168.1.61

Component	Requirement
Network Mask	◆ The appropriate network mask for the IP address. Example: 255.255.255.0
Gateway IP Address	◆ The gateway for the IP address subnet. Example: 192.168.1.254
DNS Host Name	◆ The DNS name associated with the IP address. Example: TeamWorks-1.myorg.local
DNS IP Address	◆ Up to three IP addresses of DNS servers for the IP address subnet. Example: 192.168.1.1
NTP IP Address or DNS Name	◆ Up to three IP addresses or DNS names of reliable NTP servers used to coordinate time on your organization's network—especially your LDAP directory servers. Example: time.myorg.local If using VMware, Micro Focus recommends setting up NTP in accordance with the VMware best practices guidelines (http://kb.vmware.com/selfservice/microsites/search.do?language=en_US&cmd=displayKC&externalId=1006427).

LDAP Directory Services (Users and Groups)

Table 3-6 *LDAP Directory Services*

Directory Service	Platform Version
eDirectory	◆ NetIQ eDirectory 9 or 8.8.*x*.*x* (8.8.8.3 is recommended). For more information, see the NetIQ eDirectory 8.8 Documentation website (http://www.novell.com/documentation/edir88). ◆ NetIQ eDirectory version 9 or 8.8.*x*.*x* on standalone Windows.
Active Directory	◆ Windows Server 2008 R2 Active Directory with the latest Service Pack ◆ Windows Server 2012 R2 Active Directory with the latest Service Pack ◆ Windows Server 2016 Active Directory with the latest Service Pack

Mobile Device Platforms

IMPORTANT: Accessing TeamWorks through a web browser on a mobile device is not recommended unless an app is not available for the device.

For more information about the TeamWorks mobile app, see the *TeamWorks User Help*.

Table 3-7 *Mobile Devices*

Platform	Supported Versions
iOS Phones and Tablets	◆ iOS 10.*x* or later The native app is available as a free download in the Apple App Store.
Android Phones and Tablets	◆ Android phones and tablets for Android 2.3 or later For TeamWorks 18.0, use a web browser on the device.

SQL Database Server

Table 3-8 *SQL Database Server*

Database Type	Supported Platforms
PostgreSQL	◆ Linux
Microsoft SQL	◆ 2008 R2 on Windows 2008 R2 ◆ 2012 SP2 on Windows 2012 R2 ◆ 2014 on Windows 2012 R2 ◆ 2016 on Windows 2016

Virtualization Hypervisor Platform

Table 3-9 *Virtualization Hypervisor Platform*

Hypervisor Type	Supported Versions

VMware	◆ One of the following VMware host servers for hosting the appliance VMs.
	  ◆ ESXi 6.0 with the latest update
	  ◆ ESXi 6.5 with the latest update
	
	For the most up-to-date compatibility matrix of supported VMware host servers, see the *VMware Compatibility Guide* (http://www.vmware.com/resources/compatibility/search.php?deviceCategory=software&testConfig=16) provided by VMware.
	◆ A VMware vSphere client 6.x or later for accessing the host server and the appliances for initial configuration.
	
	Not all versions of the vSphere client are compatible with versions of VMware ESXi. See the VMware Product Interoperability Matrixes (http://partnerweb.vmware.com/comp_guide2/sim/interop_matrix.php) provided by VMware.
	◆ VMware vMotion is supported when running TeamWorks on VMware ESXi.

4 Setting Up NFS Shared Storage

- See Worksheet 14—Storage Planning Summary

Table 4-1 *Exporting an NFS Directory for /vashare*

Page, Dialog, or Option	Do This
	1 - Verify that the server has adequate disk space.
	1. Make sure that the Linux server that you are targeting has the available disk space you identified in "Planning Your Appliances" in the *TeamWorks 18.0 Planning Your TeamWorks Deployment—Best Practices* guide and recorded on Worksheet 25. If necessary, add disk space to the Linux server.
	1. On the Linux server, launch YaST2.
YaST Control Center	1. In the **Network Services** section, click **NFS Server**. The NFS Server Configuration dialog box displays.
NFS Server Configuration	1. Make sure that the NFS Server is set to **Start**, that **Open Port in Firewall** is selected (running firewall required for option), and that **Enable NFSv4** is *not selected* - i.e. NFS v4 is disabled. 2. Click **Next**.
Directories to Export	1. Click **Add Directory**.
YaST2	1. Click **Browse** and choose the directory or share path identified on Worksheet 25 that has the required disk space. You can add a directory name, such as `/shared` to the path if desired. **IMPORTANT:** The directory path must not be located in the /var directory structure on the NFS server, as explained in "NFS Mount Point Must Not Point to /var on Target Server" in the *TeamWorks 18.0.1 Release Notes*. 2. Click **OK**. As your first TeamWorks appliance is deployed, a directory named `TeamWorks` will be created within the directory path you have specified. 3. If you added to the directory path, click **Yes** to confirm directory creation. 4. Leave the asterisk (*) in the **Host Wild Card** field. 5. Click the **Options** field to edit it and change the following options: ◆ `ro` to `rw` (read-only to read-write) ◆ `root_squash` to `no_root_squash`. 6. Click **OK**.
Directories to Export	1. Click **Finish**. 2. Skip to Chapter 5, "Downloading and Preparing the TeamWorks Software," on page 19.

5 Downloading and Preparing the TeamWorks Software

After planning your deployment and making sure you have the necessary system requirements in place, you are ready to download and prepare the TeamWorks software that applies to your virtualization platform.

1 Download the TeamWorks software shown below to your management workstation.

IMPORTANT: Registration with Micro Focus is required to receive an email with a download link.

Appliance Type	Filename
TeamWorks	`TeamWorks-18.`*`version`*`.ovf.zip`
Search	`TeamWorks-Search-18.`*`version`*`.ovf.zip`
PostgreSQL (only if no in-house SQL server is available)	`PostgreSQL-1.`*`version`*`.ovf.zip`

2 Extract each `.ovf.zip` file on your management workstation until an *`ApplianceType-version`* folder appears.

3 Continue with “Creating the TeamWorks Virtual Machines” on page 21.

6 Creating the TeamWorks Virtual Machines

Referring to the following Worksheets, complete the steps in Table 6-1 for each appliance you have planned to deploy:

- Worksheet 10 - TeamWorks Appliances
- Worksheet 11 - Search Appliances
- Worksheet 12 - SQL Database (if you are not using an in-house SQL database server)

Table 6-1 *Creating an appliance VM on VMware*

Page, Dialog, or Option	Do This
	1 - Launch the vSphere Client, name the VM, and choose the datastore.
vSphere Client	❒ On your management workstation, start the vSphere Client. ❒ Click **File** > **Deploy OVF Template**.
Deploy OVF Template	❒ Click **Browse**.
Open	❒ Navigate to the contents of the folder extracted in Step 2 on page 19. ❒ Select the `.ovf` file. ❒ Click **Open**.
Deploy OVF Template	❒ Click **Next > Next**. ❒ In the **Name** field, type the name of the appliance as planned on the applicable worksheet. ❒ Click **Next**. ❒ Choose the datastore and click **Next** to accept the default disk format. ❒ Do not select **Power on after deployment**. ❒ Click **Finish**. The boot disk is created and the appliance is deployed as specified to this point.
	2 - Edit the VM settings.
vSphere Client	❒ In the vSphere Client, right-click the VM and select **Edit Settings**.
Virtual Machine Properties	❒ Adjust the **Memory** and **CPU** settings according to the calculations and settings on the applicable worksheet. Of course if needed, you can adjust them later for performance tuning purposes.
	3 - Add and configure a second disk (/vastorage)

Page, Dialog, or Option	Do This
Virtual Machine Properties	❒ Click **Add**.
Add Hardware	❒ Select **Hard Disk**, then click **Next > Next** (create a new virtual disk). ❒ Adjust the **Disk Size** field value as planned for the appliance you are deploying. ❒ Under **Disk Provisioning**, select either: ◆ **Thick Provision Eager Zeroed** or ◆ **Support clustering features such as Fault Tolerance** Depending on the VMware version that you are running. ❒ Under **Location**, select **Specify a datastore or Datastore cluster** ❒ Click **Browse**, select a datastore, then click **OK > Next**. ❒ Under **Virtual Device Node** section, select **SCSI (1:0)**. ❒ Under **Mode**, select **Independent** and **Persistent**. ❒ Click **Next > Finish**.
	4 - Add and Configure a third disk (/var)
Virtual Machine Properties	❒ Click **Add**.
Add Hardware	❒ Select **Hard Disk**, then click **Next > Next** (create a new virtual disk). ❒ Adjust the **Disk Size** field value a planned for your product. ❒ Under **Disk Provisioning**, select either: ◆ **Thick Provision Eager Zeroed** or ◆ **Support clustering features such as Fault Tolerance** Depending on the VMware version that you are running. ❒ Under **Location**, select **Specify a datastore or Datastore cluster** ❒ Click **Browse**, select a datastore, then click **OK > Next**. ❒ Under **Virtual Device Node** section, select **SCSI (2:0)**. ❒ Click **Next > Finish**. The appliance should shut down at this point. ❒ Return to the beginning and deploy the next appliance. When all of the planned appliances are deployed, continue with Chapter 7, “Starting and Configuring the Appliances,” on page 23.

7 Starting and Configuring the Appliances

After the VMs are deployed with the necessary disks added and other settings adjusted according to your worksheets, it is time to start and configure the appliance software on each appliance. When this section is completed, all of the appliances will be running and ready to be deployed as an integrated TeamWorks infrastructure.

Table 7-1 *Starting and Configuring the Appliances*

Page, Dialog, or Option	Do This
	1 - Before you deploy the first VM.
	1. If you have not already done so, before you begin this process, you must set up shared storage for your TeamWorks appliances by: ◆ Exporting an NFS directory See the "Network-Based Shared Disk Space for /vashare" section of *Worksheet 14* and complete the instructions in Section 4, "Setting Up NFS Shared Storage," on page 17 before continuing.
	2 - Select an appliance.
	1. Choose one of the appliances that you deployed in Chapter 6, "Creating the TeamWorks Virtual Machines," on page 21 and refer to its planning worksheet as you start and configure it. **IMPORTANT:** You must set up your TeamWorks deployment in the order specified in Chapter 8, "Creating a Multiple-Appliance TeamWorks Deployment," on page 27.
	3 - Start the appliance.
	1. After you have downloaded the TeamWorks software and configured your appliances, you must start and configure each appliance in turn. ◆ **VMware:** In the vSphere Client, power on the first appliance, then click the **Console** tab.
	4 - Accept the license and specify the keyboard layout.
	1. After the appliance boots, the License Agreement screen displays.
License Agreement	1. Select your preferred keyboard layout in the **Keyboard Language** drop-down. 2. (Optional) use the **License Language** drop-down to change the license language. 3. (Optional) use the **Keyboard Language** drop-down to change the keyboard layout. 4. Accept the license agreement.

Page, Dialog, or Option	Do This
Passwords and Time Zone	1. On the configuration page, specify the following information: **IMPORTANT:** Keep a confidential record of the passwords you set for the root and vaadmin users below. **Root password and confirmation:** The root password provides root access to the appliance terminal prompt. Do not access appliances as the root user unless specifically requested by TeamWorks support personnel. **Vaadmin password and confirmation:** The preferred user for accessing the appliance as requested by TeamWorks support personnel. Consider using a different password for each appliance for enhanced security. **NTP Server:** The IP address or DNS name of the reliable external Network Time Protocol (NTP) server for your network. Example: time.example.com. For the best results, set up NTP in accordance with the VMware best practices guidelines (http://kb.vmware.com/selfservice/microsites/search.do?language=en_US&cmd=displayKC&externalId=1006427). **Region:** Your local region. **Time Zone:** The time zone of all file servers that TeamWorks will provide access to. 2. Click **Next**.
Network Settings	1. Specify the Hostname: **Hostname:** The fully qualified DNS host name associated with the appliance's static IP address. Example: TW-Search-1.mynetwork.example.com. 2. Specify the following: **IP Address:** The static IP address for the appliance. Example: 172.17.2.3. **Network Mask:** The network mask associated with the appliance's IP address. Example: 255.255.255.0. **Gateway:** The IP address of the gateway on the subnet where your TeamWorks virtual appliance is located. Example: 172.17.2.254. **IMPORTANT:** TeamWorks appliances do not tolerate latency and should be installed in the same subnet or a near-subnet. **DNS Servers:** The IP address of a primary DNS server for your network. Example: 172.17.1.1. **Domain Search:** The domain that is associated with the TeamWorks host name. The first is derived from the hostname. If your deployment is located in multiple domains, be sure to include the other domains as well. 3. Click **Next**.

Page, Dialog, or Option	Do This
Additional LAN Card Configuration	1. (Conditional) If you configured multiple network adapters for this appliance, select from the following options, then click **Next**: ◆ **Do Not Configure:** Select this option to configure this network at a later time as described in "Changing Network Settings" in the *TeamWorks 18.0.1: Administrative UI Reference*. ◆ **DHCP Dynamic Address:** Select this option to have an IP address assigned dynamically on the secondary network. ◆ **Statically Assigned IP Address:** Select this option to assign a static IP address on the secondary network. Then specify the IP address, network mask, and host name.
Data Store Location	1. Hard Disk 2 is automatically detected and the disk designation is displayed in the hard drive drop-down. Accept the defaults for the other options on this page by clicking **Next**. **WARNING:** If you have not already created additional disks 2 and 3 for each of your VMs and prepared a shared storage location for your TeamWorks appliances as described in early sections of this guide and in Planning Your Appliances in the TeamWorks 18.0 Planning Your TeamWorks Deployment—Best Practices guide, power off the virtual machine and make sure you have the required disk space in place for your deployment before proceeding. Otherwise, there is a substantial risk that your deployment will not meet your organization's needs.
Data Log Location	1. Hard Disk 3 is automatically detected and the disk designation is displayed in the hard drive drop-down. **TeamWorks:** Accept the defaults for the other options on this page by clicking **Next**. **Search and PostgreSQL:** Accept the defaults for the other options on this page by clicking **Configure**.
Shared Storage Type (TeamWorks and Search)	1. If you are configuring a PostgreSQL appliance, this page doesn't appear. Go to "Configuring Password, Time, and Network Settings" on page 26. 2. If you are configuring a TeamWorks or Search appliance in a multi-appliance deployment, click **Next**.
Shared Storage NFS Location	Referring to the work you did in Table 4-1, "Exporting an NFS Directory for /vashare," on page 17, do the following: 1. For the **NFS Server Hostname** field, click **Browse** and select the NFS server that you identified. If the NFS server is not found, type its IP address or DNS name in the field. 2. For the **Remote Directory** field, click **Browse** and select the directory that you exported. It is important to use the browse feature for this step to ensure that the path is correct. 3. Click **Configure**. 4. Go to "Configuring Password, Time, and Network Settings" on page 26.

Page, Dialog, or Option	Do This
Configuring Password, Time, and Network Settings	1. The settings you have specified are configured, storage is verified, and the appliance starts. Continue as indicated for your deployment type: **Multi-appliance Deployment:** Repeat the above steps starting with “2 - Select an appliance.” on page 23 until all of your appliances are started, configured, and running. Then go to Chapter 8, “Creating a Multiple-Appliance TeamWorks Deployment,” on page 27. **All-in-one (Small) Deployment:** Return to Creating an All-in-One Deployment > “Setting Up an All-in-One (small) TeamWorks Appliance” on page 42.

8 Creating a Multiple-Appliance TeamWorks Deployment

If You Need to Use a PostgreSQL Appliance Instead of a Server

IMPORTANT: Micro Focus recommends using an existing SQL database if one is available. Instructions are provided in "Setting Up the SQL Database" on page 27.

However, if you need to use a PostgreSQL appliance, do the following:

1. Prepare the PostgreSQL appliance now by completing the instructions in Appendix B, "Configuring the PostgreSQL Appliance to Provide the SQL Database (Alternate Practice)," on page 43
2. After the appliance is installed, configured, and running, skip to "Setting Up Three Search Appliances" on page 29.

Setting Up the SQL Database

Prepare your in-house SQL server by completing the steps in one of the following sections:

Configuring a PostgreSQL Server

IMPORTANT: Do not create the TeamWorks database on your PostgreSQL server manually.

Let the TeamWorks configuration wizard create the database to ensure the correct configuration.

Table 8-1 *Configuring PostgreSQL for TeamWorks*

File	Do This
	1 - Edit the configuration file.

File	Do This

PostgreSQL server > `/etc/my.cnf` file	1. Edit the file as follows:
	`[client]`
	`default-character-set = utf8`
	
	`[PostgreSQLd]`
	`character-set-server = utf8`
	`max_connections = 900`
	`transaction-isolation = READ-COMMITTED`
	`expire_logs_days = 7`
	
	The `expire_logs_days` setting is optional, but is recommended because it cleans up `PostgreSQL-bin-*` files.
	
	Unless this is done regularly, the files will consume significant disk space in the `vastorage` directory.
	2. Uncomment the InnoDB tables section.
	3. Increase the buffer pool size to approximately 60 percent of the amount of RAM that has been allocated to the dedicated server.
	For example, a dedicated server with 4 GB of RAM should have a buffer pool size of 2560 MB, as follows:
	`innodb_buffer_pool_size = 2560M`
	4. Identify or create a user account with sufficient rights to create and manage the TeamWorks database.

Worksheet 12	1. Record the username and password on Worksheet 12. 2. Continue with “Setting Up Three Search Appliances” on page 29.

Configuring a Microsoft SQL Server

IMPORTANT: Do not create the TeamWorks database on your MS SQL server manually.

Let the TeamWorks configuration wizard create the database to ensure the correct configuration.

Table 8-2 *Configuring Microsoft SQL Server for TeamWorks*

File	Do This
	1 - Configure the server.
Server management console	1. Enable remote access to the Microsoft SQL database server. 2. Open port 1433 on the Windows firewall where the database server is running. 3. Identify or create a user account that is configured with **SQL Server Authentication** and has sufficient rights to create and manage the TeamWorks database. **IMPORTANT:** TeamWorks supports only **SQL Server Authentication**. Windows Authentication and Windows Domain User Authentication to Microsoft SQL are not supported.
Worksheet 23	1. Record the username and password on Worksheet 23.

File	Do This

Server management console	1. Run the following queries against the database:
	`ALTER DATABASE database-name SET READ_COMMITTED_SNAPSHOT ON`
	`ALTER DATABASE database-name COLLATE Latin1_General_CI_AS_KS_WS`
	2. Continue with "Setting Up Three Search Appliances" on page 29.

Setting Up Three Search Appliances

TeamWorks best practices require that every multi-appliance deployment have three Search appliances. There are no advantages to having more than three.

Best practices allow for operating TeamWorks with fewer than three search appliances, but only under special circumstances, such as when reindexing is required. One appliance focuses on rebuilding the search index while the other two continue to service user requests and provide the Messaging services that TeamWorks requires.

Setting Up the First Search Appliance

Table 8-3 *Setting Up the First Search Appliance*

Page, Dialog, or Option	Do This
	1. Open a management browser on your administrative workstation and access the Port 9443 Appliance Console on the first Search appliance using the following URL: `https://IP_Address:9443` Where *IP_Address* is the IP address of the first Search appliance.
TeamWorks Search Appliance Sign In	1. Log in as the `vaadmin` user with the password that you set for the appliance in "Vaadmin password and confirmation:" on page 24.
TeamWorks Search Tools	1. Click the **Configuration** button  to launch the **TeamWorks Search Configuration Wizard**.
TeamWorks Search Configuration Wizard	1. Select **Yes:** (this is the first Search appliance). 2. Click **Next**.

Page, Dialog, or Option	Do This
Database	1. Select the database type for this TeamWorks deployment. 2. Type the DNS name or IP address of the database server or appliance. 3. The standard port for the database type is shown. You can adjust this if required. 4. Enter a name for the database. The name must not contain a dash. 5. Type the name of the database user/role that you created when preparing the database for TeamWorks. 6. Type the password for the database user/role. 7. If you have prepared your appliances for SSL communications, leave the option selected. Otherwise, deselect it before continuing. 8. Click **Next**. The credentials are validated and the process continues.
Passwords	1. Type and confirm a password for the Search and Messaging services administrator. Make a note of the password in case a support technician needs it later to resolve a support issue. 2. Type and confirm a password for service clients, such as Tomcat, to use for accessing the Search and Messaging services. 3. Click **Next**.
Locale	1. Select a Default Locale. 2. Click **Finish**. Services configuration can take a few minutes. Do not proceed until the process finishes. 3. After the process finishes, best practice dictates setting up the other two Search appliances before setting up the TeamWorks appliances. However, this is not enforced in case your circumstances dictate a different setup order. You can deploy a TeamWorks appliance when the database and at least one Search appliance are running.

Setting Up Subsequent Search Appliances

Table 8-4 *Setting Up Subsequent Search Appliance*

Page, Dialog, or Option	Do This
	1. Open a management browser on your administrative workstation and access the Port 9443 Appliance Console on a subsequent Search appliance using the following URL: `https://IP_Address:9443` Where *IP_Address* is the IP address of a second or third, etc. Search appliance.
TeamWorks Search Appliance Sign In	1. Log in as the `vaadmin` user with the password that you set for the appliance in "Vaadmin password and confirmation:" on page 24.

Page, Dialog, or Option	Do This
TeamWorks Search Tools	1. Click the **Configuration** button  to launch the **TeamWorks Search Configuration Wizard**.
TeamWorks Search Configuration Wizard	1. Select **No:** (this is not the first Search appliance). 2. Click **Next**.
Database	**IMPORTANT:** Make sure that the information entered on this screen exactly matches the information entered for the first Search appliance. 1. Select the database type for this TeamWorks deployment and enter the same information for this Search appliance as you did for the first. 2. Click **Next**. The credentials are validated and the process continues.
Search Clustering and Messaging Services	1. Best practices dictate that two Search appliances have Messaging services enabled. You can enable this on the second or third Search appliance. The configuration wizard prevents you from disabling the Messaging service when it is the only instance in the deployment. 2. Click **Finish**. Services configuration can take a few minutes. Do not proceed until the process finishes. 3. Repeat the process until three Search appliances are running–two of them with Messaging services enabled.

Setting Up the TeamWorks Appliances

Table 8-5 *Logging in and Starting the Configuration Wizard*

Page, Dialog, or Option	Do This
	1. Open a management browser on your administrative workstation and access the Port 9443 Appliance Console on a TeamWorks appliance using the following URL: `https://`*`TeamWorks_IP_Address`*`:9443` Where *IP_Address* is the IP address of the first TeamWorks appliance.
TeamWorks Appliance Sign In	1. Log in as the `vaadmin` user with the password that you set for the appliance in "Vaadmin password and confirmation:" on page 24.
TeamWorks Appliance Tools	1. Click the Configuration icon  to launch the **TeamWorks Configuration Wizard**.
TeamWorks Configuration Wizard	1. Read the on-screen information to ensure things are ready to proceed. 2. Click **Next**.

Table 8-6 *Configuring each TeamWorks to connect to the SQL Database*

Page, Dialog, or Option	Do This
Database	**IMPORTANT:** Make sure that the information entered on this screen exactly matches the information entered for the other Search and TeamWorks appliances in this deployment. 1. Select the database type for this TeamWorks deployment and enter the same information for this appliance as you did for the others in this deployment. 2. Click **Next**. The credentials are validated and the process continues. 3. Repeat this process for all of the TeamWorks appliances.

9 Setting Up TeamWorks Services

Complete the following steps to prepare your TeamWorks site and make it available to users.

NOTE: As you complete the steps in this section, refer to any Worksheets indicated to make sure that you follow your plans and have an accurate record of your TeamWorks deployment's configurations.

1 Changing some settings in the Port 9443 Appliance Console requires restarting TeamWorks.

For example,

- All modifications to settings accessed through the Configuration Icon 
- Changes to the appliance's Network settings.

We recommend that you change these settings before users begin accessing TeamWorks services. For example:

1a **Install Your TeamWorks License:** Using the Port 9443 Appliance Console > Configuration Icon > License dialog, install the same license on each TeamWorks appliance in your system.

1b **Configure Port Redirection:** If you are enabling port redirection so that users don't need to include `:8443` in the TeamWorks access URL, configure that now.

Worksheet - Network Support	1. **Path:** Port 9443 Appliance Console **> Configuration > Network**

2 Using the settings in the Port 9443 Appliance Console > Firewall dialog as a reference, make sure that your network's port and firewall settings are configured to support TeamWorks.

3 Add users and groups to your TeamWorks site and set up the LDAP synchronization processes.

Worksheet 4 - Users and Groups	1. Configure your TeamWorks system to connect to an existing LDAP source, such as eDirectory or Active Directory, to control user access to the system. **Path:** Port 8443 TeamWorks Admin Console **> System > LDAP** **IMPORTANT:** For initial access to the Port 8443 console, use `admin` as both the username and password. You are then prompted to change the password for user `Admin` before proceeding. 2. Manually create any non-LDAP users and groups that need access to TeamWorks services. For more information, see "the New User button" in the *TeamWorks 18.0.1: Administrative UI Reference*.
Worksheet 5 - LDAP Synchronization	1. Configure the TeamWorks system to synchronize with your LDAP servers. For assistance, see "LDAP Servers and Synchronization" in the *TeamWorks 18.0.1: Administrative UI Reference*.

4 Enable additional TeamWorks Users for Administrative Access.

Worksheet 8 - Administrative Access	1. Configure users for administrative access to TeamWorks. For more information, see “Assigning and Managing Port 8443 Designated Administrators” in the *TeamWorks 18.0.1: Administrative UI Reference*.

5 If your TeamWorks site needs to support multiple languages, configure the site as described in “Language and Locale Settings” in the TeamWorks 18.0.1: Maintenance Best Practices Guide.

6 After you have completed all of the topics in this list that are relevant to your TeamWorks environment, you can invite users to use the TeamWorks site. For information about how to use the TeamWorks site, see the *TeamWorks User Help*.

10 Updating to TeamWorks 18.0.1

Version 18.0.1 Availability

TeamWorks 18.0.1 is

- Available to all registered TeamWorks, Search, and PostgreSQL appliances.
- Distributed as an online update through the GroupWise TeamWorks update channel.

When to Update TeamWorks

To avoid needing to perform a full reindexing of TeamWorks, you must shut down the TeamWorks/Apache system prior to beginning the update.

Therefore, as a best practice, we recommend updating during a time when service interruption will be least disruptive, such as at night or on a weekend.

Registering for Updates

Only registered appliances can be updated to version 18.0.1. If you need to register an appliance, do the following:

1. On an appliance, log into the Port 9443 console as the vaadmin user.
2. Click the **Online Update** icon.
3. Use the Register Online Update Service dialog to register the appliance. For help, see “Register Online Update Service” in the *TeamWorks 18.0.1: Administrative UI Reference*.

Updating an All-in-One Appliance

To update an all-in-one TeamWorks appliance, complete the instructions in only the following sections:

Updating the Appliances

IMPORTANT: Make sure that you update only one appliance at a time. Do not begin with the next update until the previous update process is completed.

Complete the following sections in the order presented:

Stopping TeamWorks/Apache Services

Before beginning the update process, you must stop the TeamWorks/Apache service on each TeamWorks appliance by doing the following:

1. On a TeamWorks appliance, log in to the Port 9443 console.
2. Click the **System Services** icon.
3. Click **GroupWise TeamWorks > Action > Stop**.
4. Repeat this on each TeamWorks appliance in your deployment.
5. (Conditional) If you are updating an all-in-one appliance, skip to "Updating the TeamWorks Appliances" on page 37.

Updating the PostgreSQL Appliance

If you use the PostgreSQL appliance for TeamWorks database services, do the following. Otherwise, skip to "Updating the Search Appliances" on page 36.

1. On the PostgreSQL appliance, log in to the Port 9443 console.
2. Click the **Online Update** icon.
3. In the drop-down options list, make sure that **Needed Patches** is selected.
4. Check to make sure that the `TeamWorks PostgreSQL ...` patch appears in the list of patches.
5. Above the drop-down options list, click **Update Now**.
6. When the update completes, click **Home** (upper-right corner).
7. Click the **Reboot** button and wait for the appliance to reboot before continuing.
8. Continue with "Updating the Search Appliances" on page 36.

Updating the Search Appliances

For each Search appliance, do the following:

1. On a Search appliance, log in to the Port 9443 console.
2. Click the **Online Update** icon.
3. In the drop-down options list, make sure that **Needed Patches** is selected.

4 Check to make sure that the `GroupWise TeamWorks Search-Appliance-Product- ...` patch appears in the list of patches.

5 Above the drop-down options list, click **Update Now**.

6 When the update completes, click **Home** (upper-right corner).

7 Click the **Reboot** button and wait for the appliance to reboot before continuing.

8 Repeat the update process on each Search appliance before continuing with the TeamWorks appliances.

9 When all of the Search appliances are updated and running, continue with “Updating the TeamWorks Appliances” on page 37.

Updating the TeamWorks Appliances

For each TeamWorks appliance, do the following:

1 On a TeamWorks appliance, log in to the Port 9443 console.

2 Click the **Online Update** icon.

3 In the drop-down options list, make sure that **Needed Patches** is selected.

4 Check to make sure that the `GroupWise TeamWorks-Appliance-Product- ...` patch appears in the list of patches.

5 Above the drop-down options list, click **Update Now**.

6 When the update completes, click **Home** (upper-right corner).

7 Click the **Reboot** button and wait for the appliance to reboot before continuing.

8 Repeat the update process on each TeamWorks appliance.

9 When all of the TeamWorks appliances are updated and running, the update is complete.

Continue with “Resolving Web Client Connection Issues” on page 37.

Resolving Web Client Connection Issues

Depending on the web browser and version, web client users that were connected to TeamWorks when the update process began, might have issues connecting after the update completes.

Connection issues can be resolved by doing one of the following:

- Refreshing the browser.
- Closing and restarting the browser.
- Clearing browser cache by typing Ctrl+F5.

Appendixes

A Creating an All-in-One Deployment

To create an all-in-one deployment, you install one TeamWorks appliance. By default TeamWorks also includes the PostgreSQL database and Search functions.

Ensuring All-in-One Suitability

With few exceptions, small deployments are only suitable for proof-of-concept deployments, which, by definition, do not require extensive planning. There is, however, a planning worksheet for all-in-one deployments. See Worksheet 10-1 - All-in-One Appliance.

For a production deployment, you should use the TeamWorks 18.0 Planning Your TeamWorks Deployment—Best Practices guide and associated planning worksheets to gauge whether a small deployment could meet your organization's production needs.

All-in-One System Requirements

Most of the requirements in Chapter 3, "System Requirements," on page 11 apply to small deployments.

However, minimum RAM and CPU recommendations are increased to handle the database and search functions running in addition to TeamWorks.

- 16 GB of RAM is the minimum
- 4 CPUs - minimum

80% of the RAM should be dedicated to the Java heap.

For information about adjusting the Java heap settings, see "Changing the Memory Configuration Settings" in the *TeamWorks 18.0.1: Administrative UI Reference*.

All-in-One Deployment

To deploy an all-in-one TeamWorks appliance, complete the instructions in the following sections:

Table A-1

Section	Additional Information
Chapter 5, "Downloading and Preparing the TeamWorks Software," on page 19	You only need to download the TeamWorks software for your virtualization platform.
Chapter 6, "Creating the TeamWorks Virtual Machines," on page 21	Follow the instructions in the section for your virtualization platform.
Chapter 7, "Starting and Configuring the Appliances," on page 23	Follow the instructions in the referenced section, then continue with "Setting Up an All-in-One (small) TeamWorks Appliance" on page 42

Setting Up an All-in-One (small) TeamWorks Appliance

Table A-2 *Logging in and Setting Up a Small TeamWorks Appliance*

Page, Dialog, or Option	Do This
	1. Open a management browser on your administrative workstation and access the Port 9443 Appliance Console on the TeamWorks appliance using the following URL: `https://`*`TeamWorks_IP_Address`*`:9443` Where *IP_Address* is the IP address of the TeamWorks appliance.
TeamWorks Appliance Sign In	1. Log in as the `vaadmin` user with the password that you set for the appliance in "Vaadmin password and confirmation:" on page 24.
TeamWorks Appliance Tools	1. Click the Configuration icon  to launch the **TeamWorks Configuration Wizard**.
TeamWorks Configuration Wizard	1. Click **Next**.
Database, Search, and Messaging services Passwords	1. Type and confirm a password for each of the following system users: ◆ `db-user` ◆ `postgres` ◆ `svcs-user` ◆ `svcs-admin` 2. Make a record of the passwords in case Micro Focus Support needs them to resolve a support incident in the future. (No administrative tasks require these passwords.)
Default Locale	1. Select your Locale from the dropdown list. 2. Click **Finish**. 3. Do not close or exit the browser page until the warning message disappears.
Set Up TeamWorks Services	1. Use the information in Chapter 9, "Setting Up TeamWorks Services," on page 33 as a guide for setting up your all-in-one appliance.

B Configuring the PostgreSQL Appliance to Provide the SQL Database (Alternate Practice)

Table B-1 *Configuring a PostgreSQL Appliance*

Page or Dialog	Do This
	IMPORTANT: The following steps assume that you installed and prepared a PostgreSQL appliance as documented in the previous chapters, in addition to your TeamWorks and Search appliances.
	1. Using a browser on your management workstation, access the Port 9443 Appliance Console on the PostgreSQL appliance by entering the following URL: `https://PostgreSQL_IP_Address:9443` Where *IP_Address* is the IP address of the PostgreSQL appliance.
PostgreSQL Appliance Sign In	1. Log in as the `vaadmin` user with the password that you set for the appliance in "Vaadmin password and confirmation:" on page 24.
PostgreSQL Appliance Tools	1. Click the **phpPgAdmin** icon  to launch the phpPgAdmin utility. 2. In the left panel, click **PostgreSQL**, then log in as `postgres` with password `postgres`.
phpPgAdmin	1. Click the Roles icon  . 2. On the postgres role row, click **Alter**. 3. Type and confirm a new password for the `postgres` role/user, then click **Alter**. 4. Click **Create role**.
Create Role	1. Type a name in the **Name** field, such as `db-user`, for the role that will create the database and provide TeamWorks services with database access. 2. Type and confirm a password for the role you are creating. 3. Select the **Create DB?** and **Can login?** options. 4. Click the **Create** button. The role you created is added to the Roles list. 5. Close the browser and return to "Setting Up Three Search Appliances" on page 29.

C VMware—Changing the SCSI Controller Type

To change the SCSI controller type on a VMware-based appliance to **VMware Paravirtual**:

1. Finish the installation and power on the TeamWorks system.
2. Ensure that the TeamWorks system is running. (Log in as the TeamWorks administrator, create a user, and log in as that user.)
3. Shut down each appliance in the TeamWorks system. (For information about how to safely shut down an appliance, see "Shutting Down and Restarting the Micro Focus Appliance" in the *TeamWorks 18.0.1: Administrative UI Reference*.)
4. In VMware, change the controller to **VMware Paravirtual**.
5. Power on each appliance in the TeamWorks system.

D Troubleshooting the TeamWorks Installation

Unable to Access a Newly Installed Appliance

If you are unable to access a newly installed appliance and you need to change appliance settings, such as the IP address, use the VACONFIG utility from the TeamWorks command prompt.

For more information, see “Using VACONFIG to Modify Network Information” in the *TeamWorks 18.0.1: Maintenance Best Practices Guide*.

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PDF documents with complete information about the use of Oracle technology in TeamWorks are located in the following directory on the TeamWorks server:

```
/opt/novell/TeamWorks/stellent-converter
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