8 Communication

8.1 FTP Client [614-1]

8.1.1 Introduction to FTP Client

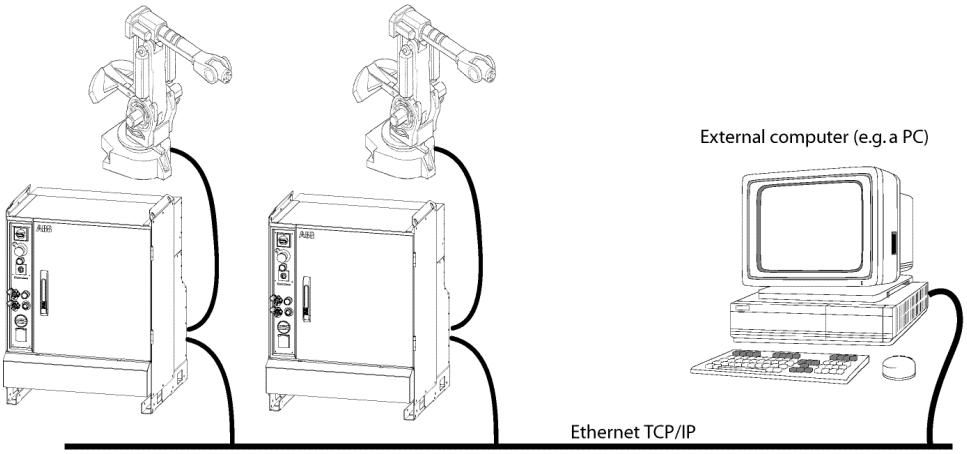
Purpose

The purpose of FTP Client is to enable the robot to access remote mounted disks, for example a hard disk drive on a PC.

Here are some examples of applications:

- Backup to a remote computer.
- Load programs from a remote computer.

Network illustration



en0300000505

Description

Several robots can access the same computer over an Ethernet network.

Once the FTP application protocol is configured, the remote computer can be accessed in the same way as the controller's internal hard disk.

What is included

The RobotWare option FTP Client gives you access to the system parameter type *Application protocol* and its parameters: *Name*, *Type*, *Transmission protocol*, *Server address*, *Trusted*, *Local path*, *Server path*, *Username*, and *Password*

Basic approach

This is the general approach for using FTP Client. For more detailed examples of how this is done, see *Examples on page 278*.

1 Configure an *Application protocol* to point out a disk or directory on a remote computer that will be accessible from the robot.

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8.1.1 Introduction to FTP Client
Continued

2 Read and write to the remote computer in the same way as with the controller's internal hard disk.

Requirements

The external computer must have:

- TCP/IP stack
- FTP Server

Limitations

When using the FTP Client the maximum length for a file name is 99 characters.

When using the FTP Client the maximum length for a file path including the file name is 200 characters. The whole path is included in the 200 characters, not only the server path. When ordering a backup towards a mounted disk all the directories created by the backup has to be included in the max path.

Example

Parameter	Value
Local path	pc:
Server path	C:\robot_1

- A backup is saved to pc:/Backups/Backup_20130109
  (27 characters)
- The path on the PC will be C:\robot_1\Backups\Backup_20130109
  (34 characters)
- The longest file path inside this backup is C:\robot_1\Backups\Backup_20130109\RAPID\TASK1\PROGMOD\myprogram.mod
  (54+13 characters)

The maximum path length for this example first looks like 27 characters but is actually 67 characters.

8.1.2 System parameters

Application protocol

This is a brief description of the parameters used to configure an application protocol. For more information, see the respective parameter in *System parameters on page 277*.

These parameters belongs to the type *Application protocol* in the topic *Communication*.

Parameter	Description
Name	Name of the application protocol.
Type	Type of application protocol. Set this to "FTP".
Transmission protocol	Name of the transmission protocol the protocol should use. For FTP, this is always "TCP/IP".
Server address	The IP address of the computer with the FTP server.
Trusted	This flag decides if this computer should be trusted, i.e. if losing the connection should make the program stop.
Local path	Defines what the shared unit will be called on the robot. The parameter value must end with a colon (:). If, for example the unit is named "pc:", the name of the test.prg on this unit would be pc:test.prg
Server path	The name of the disk or folder to connect to, on the remote computer. If not specified, the application protocol will reference the directory that is shared by the FTP server. **Note:** The exported path should not be specified if communicating with an FTP server of type Distinct FTP, FileZilla or MS IIS.
Username	The user name used by the robot when it logs on to the remote computer. The user account must be set up on the FTP server.
Password	The password used by the robot when it logs on to the remote computer. Note that the password written here will be visible to all who has access to the system parameters.

Transmission protocol

There is a configured transmission protocol called TCP/IP, but no changes can be made to it. This is used by the FTP application protocol.

8.1.3 Examples

Example configuration

This is an example of how an application protocol can be configured for FTP.

Parameter	Value
Name	my FTP protocol
Type	FTP
Transmission protocol	TCPIP1
Server address	100.100.100.100
Trusted	No
Local path	pc:
Server path	C:\robot_1
Username	Robot1
Password	robot1

Note: The value of *Server path* should exclude the exported path if communicating with an FTP server of type Distinct FTP, FileZilla or MS IIS.

Example with FlexPendant

This example shows how to use the FlexPendant to make a backup to the remote PC. We assume that the configuration is done according to the example configuration shown above.

1. Tap **ABB** and select **Backup and Restore**.
2. Tap on **Backup Current System**.
3. Save the backup to pc:/Backup/Backup_20031008 (the path on the PC will be C:\robot_1\Backup\Backup_20031008).

Example with RAPID code

This example shows how to open the file C:\robot_1\files\file1.doc on the remote PC from a RAPID program on the controller. We assume that the configuration is done according to the example configuration shown above.

```
Open "HOME:" \File:= "pc:/files/file1.doc", file;
```

8.2 NFS Client [614-1]

8.2.1 Introduction to NFS Client

Purpose

The purpose of NFS Client is to enable the robot to access remote mounted disks, for example a hard disk drive on a PC.

Here are some examples of applications:

- Backup to a remote computer.
- Load programs from a remote computer.

Description

Several robots can access the same computer over an Ethernet network.

Once the NFS application protocol is configured, the remote computer can be accessed in the same way as the controller's internal hard disk.

What is included

The RobotWare option NFS Client gives you access to the system parameter type *Application protocol* and its parameters: *Name*, *Type*, *Transmission protocol*, *Server address*, *Trusted*, *Local path*, *Server path*, *User ID*, and *Group ID*.

Basic approach

This is the general approach for using NFS Client. For more detailed examples of how this is done, see *Examples on page 278*.

1. Configure an *Application protocol* to point out a disk or directory on a remote computer that will be accessible from the robot.
2. Read and write to the remote computer in the same way as with the controller's internal hard disk.

Prerequisites

The external computer must have:

- TCP/IP stack
- NFS Server

Limitations

When using the NFS Client the maximum length for a file name is 99 characters.

When using the NFS Client the maximum length for a file path including the file name is also 99 characters. The whole path is included in the 99 characters, not only the server path. When ordering a backup towards a mounted disk all the directories created by the backup has to be included in the max path.

Example

Parameter	Value
Local path	pc:

Continues on next page

8.2.1 Introduction to NFS Client
Continued

Parameter	Value
Server path	C:\robot_1

- A backup is saved to pc:/Backups/Backup_20130109
  (27 characters)
- The path on the PC will be C:\robot_1\Backups\Backup_20130109
  (34 characters)
- The longest file path inside this backup is C:\robot_1\Backups\Backup_20130109\RAPID\TASK1\PROGMOD\myprogram.mod
  (54+13 characters)

The maximum path length for this example first looks like 27 characters but is actually 67 characters.

8.2.2 System parameters

Application protocol

This is a brief description of the parameters used to configure an application protocol. For more information, see the respective parameter in *System parameters on page 281*

These parameters belongs to the type *Application protocol*in the topic *Communication*.

Parameter	Description
Name	Name of the application protocol.
Type	Type of application protocol. Set this to "NFS".
Transmission protocol	Name of the transmission protocol the protocol should use. For NFS, this is always "TCP/IP".
Server address	The IP address of the computer with the NFS server.
Trusted	This flag decides if this computer should be trusted, i.e. if losing the connection should make the program stop.
Local path	Defines what the shared unit will be called on the robot. The parameter value must end with a colon (:). If, for example the unit is named "pc:", the name of the test.prg on this unit would be pc:test.prg
Server path	The name of the exported disk or folder on the remote computer. For NFS, Server Path must be specified.
User ID	Used by the NFS protocol as a way of authorizing the user to access a specific server. If this parameter is not used, which is usually the case on a PC, set it to the default value 0. Note that *User ID* must be the same for all mountings on one robot controller.
Group ID	Used by the NFS protocol as a way of authorizing the user to access a specific server. If this parameter is not used, which is usually the case on a PC, set it to the default value 0. Note that *Group ID* must be the same for all mountings on one robot controller.

Transmission protocol

There is a configured transmission protocol called TCP/IP, but no changes can be made to it. This is used by the NFS application protocol.

8.2.3 Examples

Example configuration

This is an example of how an application protocol can be configured for NFS.

Parameter	Value
Name	my NFS protocol
Type	NFS
Transmission protocol	TCP/IP
Server address	100.100.100.100
Trusted	No
Local path	pc:
Server path	C:\robot_1
User ID	Robot1
Group ID	robot1

Example with FlexPendant

This example shows how to use the FlexPendant to make a backup to the remote PC. We assume that the configuration is done according to the example configuration shown above.

1. Tap **ABB** and select **Backup and Restore**.
2. Tap on **Backup Current System**.
3. Save the backup to pc:/Backup/Backup_20031008 (the path on the PC will be C:\robot_1\Backup\Backup_20031008).

Example with RAPID code

This example shows how to open the file C:\robot_1\files\file1.doc on the remote PC from a RAPID program on the controller. We assume that the configuration is done according to the example configuration shown above.

```
Open "HOME:" \File:= "pc:/files/file1.doc", file;
```